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September 1923

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Growing Hills of Apples

by Beulah Canterbury

Cherry blossom time.

I want to tell the story of the Varien brothers and their apple orchard farm on its five hills, as answer to the small orchardist and farmer who is saying that he can't compete with the big commercial orchardists and who is permitting the small orchards that used to dot the country landscapes of our middle west to die out.

Nine years ago Robert and Ralph Varien, farmer boys of 16 and 17 years of age, bought a 72-acre farm spread out over five hills in the form of an amphitheater. The hills were half planted with five-year-old Baldwin and Grimes Golden trees. The boys borrowed the money to buy the farm land, worked in the city four miles from their farm (Canton, Ohio) in the winters and spent their summers working from sun-up to sundown, in their orchards. Their city employers called them "snowbirds," for it was only when the snow would fly, from November to April, that they worked in town, in steel mills, clothing stores, rubber works, storage companies, anything to get money to pay on the mortgage, to buy implements, fertilizer, new trees, such as cherry and peach trees and berry bushes that would produce an income while waiting for the apple trees to bear.

Last year, the second year of real bearing of the trees, and the fourth year of their all-around-the-calendar residence on the farm, the Varien boys' faith in their hills of apples and in themselves began to bear fruit (in two senses of the word), for they cleared $7,000, most of which, outside of their living expenses, they put back into their hills in the shape of new trees. In these nine years of their ownership of the orchard hills, the Varien brothers have made such a close study of the nature, growth and treatment of apple trees that they can tell almost to the apple, what and when they will produce.

Their apple trees are planted in rows down the five hills, the rows stopping before the foot of the hills so that the apple trees are never touched by frost, every part of the orchard having lower land below it, which draws the frost as a magnet draws steel. Besides this air-drainage, which the Variens claim is the first enemy of frost, they fertilize with nitrate of soda which keeps the trees in splendid condition. "That's the second enemy of frost, the condition of the trees," remarked one of the owners, pointing out the rich deep green color of the leaves of the trees, a depth of color repeated in the grass about the trees where the nitrate had soaked into the soil.

Uses Mulch System.

The sandy chestnut loam of the hills is not cultivated between the trees as it tends to wash the soil down the slopes. Instead, the mulch system is used by planting heavily with sweet clover and mowing it down, being careful to plow fire lines before they mow. One year the Variens had a loss of $3,000 in trees and ripened apples, the dried clover grass catching on fire before they had plowed their fire lines. Now they plow first so that a fire on starting, cannot spread.

The Variens prune the tops of the apple trees and trim out the center so that the sunlight penetrates to the lowest branches, the tree being kept low and spreading like a bush, most of the apples being picked without a ladder, in fact five-eighths of their apples last year were picked from the ground. It is possible to sit down at the foot of a Varien Grimes Golden tree and pick a bushel of apples without moving or even rising to your knees, for by letting the sunlight down to the lowest branches they are kept productive. They are only a foot or so from the ground and when borne down by the weight of the matured apple crop, the lowest branches rest lightly on the ground, the next laden branches on them and so on, so that the weight of the apples is borne by the earth beneath, not by the limbs alone. As a result of this method there are no broken branches, no need of props and a much greater ease in picking the fruit, therefore a much speedier and cheaper process.

Ralph and Robert Varien have made a study of what they call the "vacations of the trees"—all work and no rest not being Nature's way of doing things—so the Variens see to it that all their trees do not go vacationing the same year. For instance, Baldwins only bear well every other year, so one Baldwin hill will be fertilized with nitrate heavily one spring so that it bears well the next. That year they fertilize the other Baldwin hill leaving the first to take its vacation on the off year, thereby providing a steady Baldwin crop year after year. And the same thing applies to their other fruits, making a certain average of trees bearing each year. In their vocabulary there is no "apple year" or "cherry year."

The Grimes Golden trees they have interspersed with Ganos in a part of the orchard while between the Baldwins they planted peaches which have been bearing while the Baldwins were "coming of age." Now they are taking out the peach trees to give the Baldwins room but, in the meantime, the peaches have been making that hill pay.

Spray Four Times.

The Variens spray their trees four times, once for the dormant, once at drop of petal, 15 days afterward and then eight weeks later. They never have a wormy apple and are able to guarantee money back if the customer finds a wormhole in a bushel.

This year they used 12 bbls. of lime and sulphur solution and 200 lbs. of arsenate of lead.

Good spraying pays.

Some of their apple tree limbs have 50 apples to the yard.

In planting new trees the Variens fertilize so thoroughly with nitrate of soda (they used 4 tons last year) that the succulent young shoots are most appetizing to mice and rabbits, so to protect the young trees they use about them a roll of rubberoid roofing fastened together with wire. In pruning the young trees, the Variens are very careful to start the limbs one above the other on opposite sides of the trunk so that the tree will not split when heavily weighted with apples, as is the case when the limbs are directly opposite.

Diversified Fruit Growing.

Though the specialty of Trummel Hill farm is apples, the owners are successful growers of other fruits which have been bringing in the money for them to "carry on" their apple culture. They have 350 cherry trees producing this year, 7,000 qts. of which they sold entirely to motorists from the city who were attracted by a 3-line ad on the front page of the city paper. They paid their pickers 3 cts. a qt., 1 ct. for the baskets, netting 8 cts. a qt. as they sold them for the wholesale price of 12 cts., so they took in $560 from the crop. And there wasn't a wormy cherry. They spray their cherry trees just once, at the fall of the blossom.

In the low land at the foot of the orchard hills three-fourths acre of strawberries yielding $300 this year, one-half acre raspberries yielding $600, and one acre blackberries yielding $500, are planted. The Variens raise nothing else except grain enough for the six head of horses they use in their orcharding.

They own a little truck with which

(*Concluded on page* 21.)

An ideal condition—low headed trees with fruit distributed to the very ends of the lower branches.

How to Make Real Fruit Drinks

by W. V. Cruess

JUDGING from the glaring billboard advertisements that greet the eye and the full-page, colorful advertisements in the food and beverage journals of America, one would think that the American public is well supplied with fruit drinks. But if the said advertisements induce one to purchase a drink of these "fruity" beverages, a sad disappointment is the usual result. The highly advertised and beautifully colored effervescent liquid, labeled to suggest grape juice, is usually a concoction of coal tar dye, synthetic chemical flavor, citric acid, water and sugar. The wonderful "orange" drink, when sampled, proves to be artificially colored and flavored water with some sugar and citric acid added. The oranges from which the drink was made probably grew in Chicago or New York and never saw California or Florida. Other "fruity" drinks could be cited; among these are so-called raspberry, strawberry, pineapple and, more recently, imitation loganberry.

The writer does not wish to injure the business of the coal tar dye manufacturers nor of the manufacturers of saccharin, nevertheless he believes that the American fruit growers are not receiving a square deal when the American public is "bamboozled" into buying synthetic, chemically prepared drinks in the belief that they are getting the real fruit beverages. This conviction was so strong that three years ago the time and study of two members of the Fruit Products laboratory were placed upon this problem. The work is still in progress and the present paper is largely a progress report.

Extent of the Beverage Industry.

According to the annual report of the Commissioner of Internal Revenue, the value of all soft drinks, exclusive of mineral waters, consumed in the United States and possessions for the year ending June 30th, 1921, was $618,394,565.90. The value of bottled beverages, other than unfermented grape juice, ginger ale and mineral waters, was $242,962,794.70. At an average of 5 cts. per bottle, this would represent nearly 5,000,000,000 bottles, or approximately 45 bottles per capita. Unfermented cider is not listed in the report. This represents an increase of approximately 66 per cent over the consumption estimated by the United States Department of Agriculture for 1918.*

Of the totals given above, California produces approximately 3.4 per cent of the unfermented grape juice and natural mineral waters, 2.5 per cent of the cereal beverages, and 5.1 per cent of the remaining soft drinks.

The commissioner's report shows that of the beverages consumed in America, only a very small proportion is made from fruits. Our investigations have demonstrated that it is possible to prepare from fruits, at a moderate cost, beverages superior in quality to the imitation fruit beverages now sold in such large quantities.

How Fruits Are Used in Bottled Beverages.

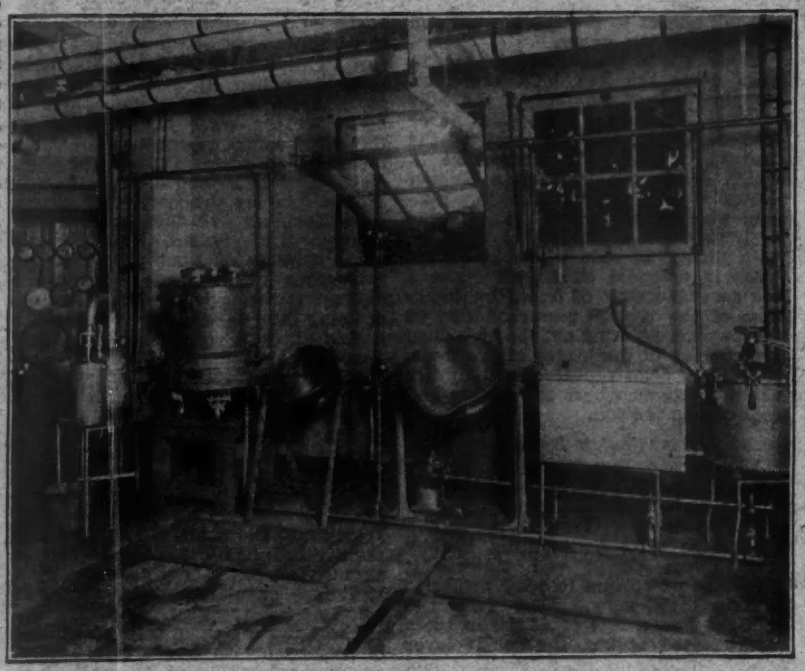
The juices of fruits can be dispensed to the public in several forms —all of us know the pleasing flavor and thirst-quenching qualities of bottled grape juice and of bottled cider. These juices, however, are generally too expensive for the average consumer of soda pop. The ultimate consumer of most of the soda water is the school child and his limit is a drink of 10 cts., more often 5 cts., and he does not feel inclined to spend his dime or nickel for a small drink of grape juice but prefers to spend it on a large drink of soda water.

Fruit juices are also dispensed in large quantities from the freshly crushed fruit. Recently a national campaign has been undertaken by the orange growers of California to place in every soda counter of the country a small machine for extracting juice from oranges before the customer. These machines have proven very popular and their use has greatly extended the consumption of pure orange juice. Enormous quantities of cider are benzoated and sold in barrels, to be later dispensed at soda fountains, etc. All of these drinks have their place, but I believe the demand for a cheap carbonated fruit beverage is still unfilled and leaves the field open to the imitation products.

We shall attempt to present the results of our investigations to date on methods of making available to the American public carbonated fruit beverages at a moderate and modest price. In brief, the method of accomplishing this end is to prepare, first, from suitable fruits, syrups. A measured quantity of the fruit syrup is placed in an 8-oz. soda water bottle and carbonated water is added to fill the bottle. The product is then preserved by pasteurization.

Preparing Fruit Syrups for Bottling Purposes.

The method to be followed in preparing a fruit syrup for bottling purposes will vary according to the nature of the fruit. Syrups are most easily prepared from berries and berry syrups will, therefore, be discussed first. We have found the loganberry to be the most popular berry for the purpose. It will be used as an example. The berries are harvested when dead ripe. They should be crushed and pressed within a few hours after harvesting, in order that fermentation or molding will not occur. We crush the berries and heat them to about 140 deg. F. They are pressed immediately and the juice is filtered; once through a felt filter bag and once through a cotton pulp filter. A sparkling clear juice is the result. To this juice we add sufficient sugar to bring the sugar content of the syrup to 45—in other words, we add slightly less than 1 lb. of sugar to each pint of juice. If we add more sugar than this we find that the syrup turns to jelly. If we add less the product is apt to be astringent or puckery in flavor. We preserve the syrup for future use by placing it in bottles, sealing the bottles and pasteurizing the bottles and contents in water at a temperature of 175 deg. F. for 30 min. We have also preserved the syrups in bottles or in enamel lined cans by storing it at a temperature of 15 deg. F.—that is, in cold storage. This is essentially the process devel-



The fruit is heated in these kettles before pressing.

*Weekly News Letter, U. S. D. A., May 14, 1919, estimates consumption at 3,000,000,000 bottles per year.

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The Manufacture of Wholesome Cider

By W. W. Chenoweth

THE average commercial apple crop in the United States for the past five years is a little more than 165,000,000 bushels. The average farm price for these apples was just under $1.40 per bushel. The commercial crop, i. e. the crop marketed, does not, by any means, represent the total crop. There are those retained by the producers for their own use and those commonly known as culls or cider apples. Several years ago the Department of Agriculture stated that approximately 25 per cent of the apple crop of the country made no impression on the market since it was of a grade too inferior for general market purposes.

The statement was also made that of this loss 15 per cent was converted into cider, or fed to live stock, while 10 per cent was a total loss. If conditions are similar today, and no doubt they are, then the average total crop for the past five years has been approximately 220,000,000 bushels. If 10 per cent of this has been a total loss the apple growers have been producing an annual crop of 22,000,000 bushels which have brought them no return, and which, in most cases, has cost as much to produce as did the 165,000,000 bushels which were sold at an average price of $1.40 per bushel.

Twenty-two million bushels of apples represent a tremendous loss. Had they been sold at the average price of those marketed they would have added a little more than $30,000,000 to the income of the fruit growers.

Apples of unmarketable grade possess high potential value, and while it may not be possible to save the entire crop a large part of it should be utilized, and eventually the progressive fruit grower will see to it that his culls do not waste nor sell for less than the cost of production. Just how he is going to do this will depend somewhat on individual conditions. But the following avenues are open to those who care to investigate: The manufacture and sale of apple butter and allied products such as cider jelly, boiled cider and jelly base; the manufacture and sale of sweet cider and the manufacture of cider vinegar.

In order to engage in any one of these it is necessary to first have equipment necessary for making cider.

There are three fundamental requirements in producing high quality cider: A good mill, the right kind of fruit, and cleanliness. Any violation of the above will result in an inferior cider.

The Mill.

A cider mill consists of two essential parts, viz., the pulper and the press. Pulpers are of two types, the crusher, usually of cast iron, and the grater, made of steel. The crusher does not produce a fine uniform pulp which reduces the possible yield of cider and the acids of the apples acting upon the cast iron often, in fact generally, produce a turbid dark colored cider. On the other hand the grater will produce a fine even pulp and the acids do not affect the steel parts. The yield is greater and the cider is clear and of normal color.

There are several types of presses, but two are in common use, viz., the Screw and the Hydraulic. The Screw press is the least effective of all types, while the Hydraulic represents the best type.

Cider mills are of two general types, the hand mill and the power mill. The hand mill, as a rule, is equipped with a crusher and a screw press. It represents the least efficient type of equipment for the production of cider. The ordinary hand mill, as it is commonly operated, will give a yield of about 2 gallons of inferior cider per bushel, which is half of the amount present in good hard cider apples. Most hand mills use the hoop type of cheese, i. e., the crushed fruit falls into a slatted hoop and when filled half to three-fourths full it is placed under the screw and pressure is applied to this large volume of spongy pulp. Other hand mills use the rack and cloth type of cheese, i. e., the crushed fruit falls into a shallow frame covered with a stout burlap or special press cloth. When the frame is filled the corners of the cloth are folded over the top surface, the frame is removed and a slatted rack is placed on top of the folded cloth. The frame and another cloth are placed on this rack and the first operation is completed until six or more of these thin cheeses, each enclosed in its press cloth and separated from each other by a slatted rack, have been made. This series of small cheeses is then placed under the screw and pressure is applied. This last method of building the cheese will increase the yield of cider almost 50 per cent over the hoop type of cheese. Pressure can be applied much more effectively to these thin cheeses separated by the slats than to a large mass as in the hoop cheese.

The power mill requires some motive power as steam, electric motor, or gas engine. They are universally equipped with a grater and the cheese is of the cloth and rack type. The pressure is applied by means of a hydraulic pump. The amount of pressure that may be applied varies according

(Concluded on page 24.)

Rambles of a Horticulturist

by C. I. Lewis

THE writer of this article recently had an unusually fine opportunity to study the horticulture of our southern states being one of a party of four taking an automobile trip through Tennessee, Georgia, North and South Carolina and Virginia, the other members of the party being Mr. and Mrs. A. B. Howell and Lawrence Stark of the Stark Bros. Nurseries, Louisiana, Mo. The readers of the AMERICAN FRUIT GROWER MAGAZINE in the next few months are going to have the benefit of the horticultural observations made on this trip.

Tennessee is a land of great horticultural opportunity, its growers today little realizing its remarkable horticultural possibilities. The land from the western to the central part of the state is gently rolling while through the central part to the eastern border it can be classed as mountainous. The valleys of the Tennessee river, Cumberland and its tributaries are extremely rich. The soils on the whole throughout the state seem fairly rich in mineral matter. The problems as far as orcharding is concerned are to prevent soil erosion on the one hand and to keep an adequate supply of nitrogenous material on the other.

The state as a whole is heavily timbered with hardwood timbers of great variety. The air and soil drainage on most of the hill land is remarkably good. Land values are relatively low.

Years ago Tennessee had a considerable apple development but there came a decline and this decline has been carried to the point where very few home orchards are even found in the state. There are, however, a number of sections which are developing rapidly along horticultural lines and opportunity in that state lies along three distinct lines: First, is peach growing. The districts are extremely early and would be brought into competition with parts of North Carolina, Arkansas and some of the earlier sections of Delaware and Maryland. The second, which perhaps is the best opportunity in the state, is along the lines of early apple production, while the third opportunity is along the lines of staple winter varieties for home consumption.

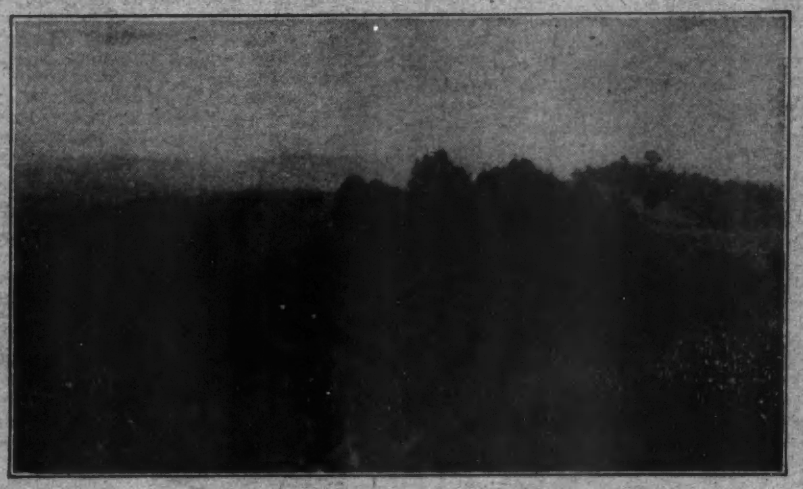
Peach Development.

The largest peach district of the state is in Roane County at Kingston. This is in the Knoxville district. Other sections which are developing extensive peach interests are the Salescreek, Graysville and Cleveland districts of the Chattanooga section.

Kingston is an ideal place for peach development. There are high, broad, rolling hills from which the cold air drains down into the Tennessee river and is carried off into the wide gap in the valley at that point. The lands which have been planted to peaches were a few years ago thought worthless. Much of it could have been purchased for $10 an acre and less. It is hard to know what good peach land can be purchased for in that section today as there is little or no land in that section for sale, practically no peach growers have their orchards on the market. Six hundred thousand trees have already been planted and more are going in each year. There are enough bearing trees at the present time to produce 100,000 bu. of peaches annually and before long the crop should reach one-half million bushels. It is a district of large orchards. There are a dozen or more orchards running from 50 to 200 acres in extent, such as the S. W. Point orchard, Elberta Orchard Co., Southern Orchard Co., Hammond Orchard Co., Crowder Orchard Co., John Clark and Bros., Jack Crowder, Dietz Bros., Patten & Sons, Parker & Gallagher, Charles M. Rose & Sons, J. B. Ladd & Son, the Martin Orchard Co., Ladd Bros., T. B. Morrison, John Neergaard, the High Point Orchard Co., J. P. Zurkle, and many others too numerous to mention.

In most of the orchards clean tillage is practiced and nitrate of soda or sulphate of ammonia is added after the crop is harvested. It is felt that fertilizing at that stage of tree development puts it in good condition for the next year's crop. One wonders, however, if better results would be obtained if the orchards were fertilized before the trees bloom, judging by the experiences in other districts. Cover crops of cow peas are commonly grown. The trees are generally planted about 18 ft. apart and run about 130 to the acre. High powered modern sprayers are generally used. In planting trees the June budded trees are preferred, as is true throughout the entire south. Ninety-five per cent of the planting in the Kingston districts is Elberta with a few Brackett, some Belle and Carman.

Charles M. Rose orchards, Kingston.



Typical view in the Knoxville district.

Fine peach orchard of Mr. Russell's at Knoxville.

While there is no co-operative selling organization, the big growers have sort of a gentlemen's agreement on the sales. The fruit is handled on an f.o.b. basis, two-thirds in crates and one-third in bushels. Two dollars and seventy-five cents a crate and $3 a bushel were realized last season. It is nothing uncommon for an orchard to have sales amounting to over $500 gross and there are instances of records much higher than this.

Ordinarily the Elbertas ripen about July 18th. While the crop is light this year, the district has harvested two very full crops and practically has not had a cleanup in 16 years.

The Russell orchard, near Knoxville, is a typical example of a fine Tennessee orchard. It is planted on hills and is located near a splendid market where little competition is found. The soil is generally a red clay. Most of the good fruit soils of Tennessee are red and dark clay loams. The light and white soils are principally the ones to be avoided. Mr. Russell has 75 acres of peaches, mostly J. H. Hale. This variety grows very large, never forming buttons. Individual specimens 1½ lbs. in weight have been picked and not uncommonly the fruit runs from 1 to 1¼ lbs. in size. Some Hiley, Red Bird, Alton, Mayflower, Carman, Elberta, Elberta Queen and Krummel are grown. Mr. Russell says that if he were planting again he would make his varieties mostly Hale, Krummel, Mayflower and Alton. This year the Mayflower and Alton brought $6 a bushel. A remarkable record was made with J. H. Hale during a full week. Six tons a day were harvested except on Saturday when 7 tons were picked, bringing $7 a bushel. This price is unusual, could not be generally expected in the state and can only be secured where an orchard is unusually located as regards marketing and where the fruit is unusually fine. He applies nitrate of soda to the orchard as soon as the crop is off. His Krummels are his heaviest bearers. He has had five full crops in a young bearing orchard. An older bearing block has had six full bearing crops since Mr. Russell has owned the orchard and nine previous crops. He believes that the best pruning system is to remove each year one large limb and thin out the trees generally. He believes a peach orchard in Tennessee can be made to bear 20 years. He uses 100 lbs. of dichlorobenzene annually. He says he gets practically perfect control. He used to employ a girl to dig out borers at the rate of 25 cts. an hour. She worked from November to April and was able to get about 60 per cent control. He sprays his orchard seven times for the late peaches, giving two winter sprays in December and January. Standard lime and sulphur and arsenate of lead at the rate of 1-50 are applied just as the shucks burst. The second spray is given four or five days later and he follows this up with self-boiled lime and sulphur, 8-8-50, at intervals of two weeks up to the time the fruit colors. He expects to put in speed wagons this next year and deliver peaches up to a radius of 50 miles.

In the Graysville and Salescreek districts the largest development is taking place. William List and Mr. Downey are the largest growers. The general development and handling is much as one finds in Kingston or in Mr. Russell's orchard. Some Hales are planted but they develop such little peaches and brown rot so badly that they are being gradually discarded. The Brackett is preferred, although the Hale, because of its long blooming period, may escape frost which other varieties would encounter. These growers practice the regular spray schedule except that in the last two sprays atomic sulphur is used because it does not stain the fruit. There are enough peach trees in this district at the present time to produce annually from 200 to 300 cars, and heavy plantings are taking place each year.

In the Cleveland district there are several hundred acres of peaches. Tom Brown and S. N. Varnell, president of the horticultural society, are the leaders in that district.

There are good opportunities in peach growing in Tennessee but one should not expect extreme high prices to continue indefinitely if the acreage is developed extensively.

Apple Production.

Early apples are proving to be very profitable in Tennessee. By the middle of June the first of the early Harvest and Transparent are rolling to the market, followed by such varieties as Fanny, Liveland Raspberry, Improved Red June, etc.

Davidson, Wilson and Maury counties have developed the industry perhaps more than others. Henry Porter of Springhill is one of the biggest

(*Concluded on page 28.*)

Italy in the Ozarks

by Edward Allen Drayer

THE Italian people of America will be proud of the work done by a colony of northern Italians at Knobview, Mo., 96 miles southwest of St. Louis on the Frisco railroad. None but Italians live in the village and for miles around. Since immigrants from Italy usually come to our large cities, the question is asked, "What brought this colony to the northern slope of the Ozark Hills, almost a hundred miles from any large city?" The answer is a story.

Twenty-five years ago a number of families left the hills of their native land and came to Sunnyside, Ark. This was a district of fever and malaria, among swamps and low land. In less than two years so many of the people died that those who still lived were forced to leave for higher land. With only a thousand dollars among the 50 families they moved to the place now called Knobview and spent some of their money for land, which was then very cheap, some of the little farms costing only a dollar or two an acre. Some of it was level, but there were many hills, covered with trees, and the soil was not of the best.

But this colony, with that noble courage that distinguished Italy in its struggle in the northern mountains with its powerful rival, Austria, during the late war, made farms of this rough land in Missouri. They sold what timber they could, but it brought very little money; they farmed in summer and went to the coal mines in winter. They are not rich today, but they have a good many times the thousand dollars they brought with them. They own all the land around Knobview and are more prosperous than their American neighbors.

It was most natural for these people, who had grown up among the vineyards of Italy, to plant grape vines on their new land. Vines cost money and the vineyards were not large, but they were well cultivated. Some of the old vines now yield 200 or 300 lbs. of grapes each year. Americans bought land near the Italians but could not make a living and moved away. The Italians are still there and do not want to leave. They have found that they can always sell their grapes for a good price, for they are just half way between the great vineyards of California on the west and New York on the east.

Growers Co-operate.

Until the prohibition law went into effect most of the grapes were made into wine. Two years ago the Knobview Grape Growers' Ass'n was formed and they can now sell their fruit by the carload. The year 1922 was good for grapes. From only 30 acres of the oldest vines they sold 11 carloads for $8,670 above all expenses, or $289 an acre. If the great railroad strike and some other troubles had not cut the price to 4½ cts. a lb., over $400 an acre would have been realized. This seems like a large sum from land that can still be bought for from $5 to $50 an acre, and which usually makes from $10 to $15 an acre when planted to grain.

There were new vineyards on other land, from which the grapes were made into juice, jelly and jam. They have planted still another hundred acres recently, and are planning to increase their vineyards to a thousand acres soon.

The Moses who led these people into the Promised Land is A. M. Piazza, who is still their leader. He is also a successful cheese maker, a good farmer and is teaching his people how to fertilize their land.

The community has its own church and school.

These people are not rich, but considering the small start they had, they have done remarkably well. Their example is beginning to be noticed by their American neighbors, and more vines are being planted in the surrounding counties.

Important Lesson Learned.

The important lesson in this case is the excellent example of patience, intelligence and industry, which shows many other people in the Ozark region that people can prosper on poor land and in the face of discouragement. Also it has taught that there are industries that can be made to pay on poor land. These industries are: Fruit Growing, Dairying, Live Stock and Poultry.

All over the Ozarks people are awakening to the importance of these four industries. Land that will raise very little corn or wheat can be made to produce good hay and fodder, and with these feeds dairy cattle can be made to pay in the Ozarks as well as anywhere. Also with plenty of cattle the land itself will soon be fertilized and will yield more grain.

In every kind of fruit the Ozarks do as well as the best known fruit districts so long as trees and vines are properly sprayed and cultivated. The Italians have succeeded with grapes because they learned their lessons in Europe and are willing to work and get the best results. When the Ozarks are better known for the fruit that can be grown, we will hear of more prosperity.

(*Concluded on page 14.*)

A Utah Apple Grower's Crop Success

by W. H. Olin

FOR some 17 years Frank Spencer, Jr., of Provo, Utah, has successfully grown an apple crop. Each crop was better in quality than the preceding one. While this successful apple man has 30 acres in apple trees, but seven acres were planted by himself and in the thorough manner he fully approves. This is a Jonathan orchard that has made a mighty good performance record from the first time it came into bearing.

These 23 additional acres Mr. Spencer had to buy from his neighbors for his own protection from insect pests and fungus diseases. These neighbors were not careful orchard men and declared apples do not pay. The last of these contiguous orchards that had never paid, this careful orchard man bought of his neighbor two years ago. As Mr. Spencer stated to the writer, it was a "Duke's mixture of varieties" of 125 bearing trees on 2½ acres. Each one of these trees was so infested with San Jose scale you could scrape them off in masses all over the bark. The same season he made the purchase this apple grower used a power sprayer with the right spraying solution of sufficient strength and not only succeeded in killing the scale on these 125 heavily infested trees but got 1,200 boxes of commercial apples from the orchard and paid off the purchase price the first season.

A section of Frank Spencer's orchard.

This latest addition has good promise but it illustrates the mistake of so many men in planning and planting young orchards. This small orchard of 2½ acres has no less than 12 to 15 varieties of apples. This means extra trouble and expense in top grafting undesirable and non-commercial variety trees to secure the leading commercial types that are alone profitable.

Uses Up-to-Date Methods.

In spite of this disadvantage, County Agent Joe Welch tells us he considers Frank Spencer is doing better with his apple orchards and is getting a greater net return per tree than any other grower in Utah County. He keeps up his soil fertility by judicious use of well composted barnyard manure. He keeps his trees well pruned so they bear fruit and not a surplus

(*Concluded on page 23.*)

Apple Storage and Home Marketing

by Laurenz Greene

THE increased demand for fruit at the orchard which has developed in recent years in middle western states has eliminated many of the fruit grower's worries and has brought other though less troublesome ones. Automobile and truck trade is a highly profitable one, reducing, as it does, package, hauling, shipping, and marketing costs. A serious difficulty in developing this trade is the lack of storage facilities on the farm, and often within reasonable shipping distance. This makes it necessary to dispose of the fruit over a short period of time during a rush period and in hot weather, producing many dissatisfied customers.

Cool Air Storage an Aid.

The Indiana Experiment Station, believing that cool air storage would greatly aid in extending the marketing season, planned and constructed a cool storage on one of their outlying farms at Bedford, Ind., in 1922. The building was completed in time to care for a portion of the 1922 crop but not in time to get accurate records as to the storage efficiency. Some 5,000 bu. were stored in November and kept in excellent condition until the supply was all sold out in January.

This farm is known as Moses Fell Annex to Purdue University. It was bequeathed to the Indiana Station by Moses Dunn with special provisions as to the experimental and demonstrational use to be made of it. Since 1914 an old orchard scattered over 80 acres and containing about 1,100 bearing trees has been renovated and made to bear 9,000 bu. of apples in 1922. These apples are now all sold at the farm to customers who call there for them. In addition to the orchards, experiments and demonstrations with poultry, live stock and general farm crops are carried on.

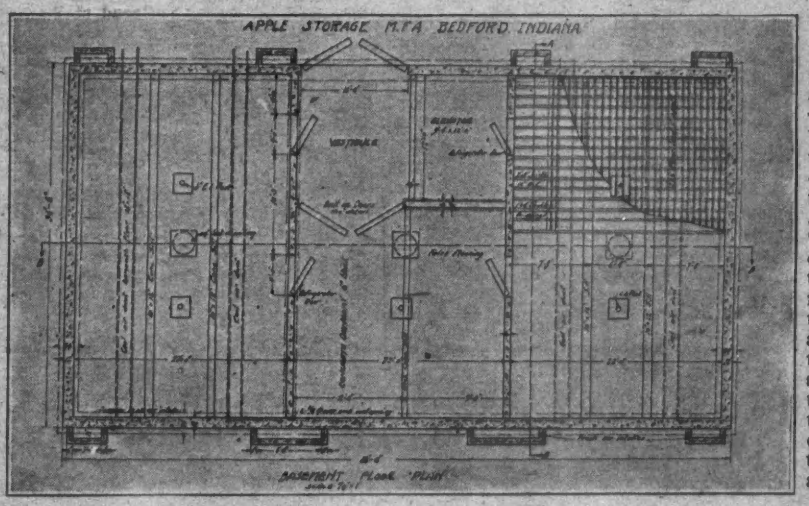
In a commercial orchard about 12 miles away another storage designed along the same lines as the one at the Moses Fell Annex is being built this summer. The details of construction with methods of temperature control may prove of interest to other growers.

The building, as will be noted from the photos and drawings, is a three story affair with storage basement, packing floor and package storage. The dimensions are 36 by 68 ft. The basement is built in the hillside with double doors large enough to permit entrance of a loaded wagon on the north or lower floor level.

Some Special Features.

Some special features are worthy of note. The false floor permits the entrance of cool air beneath all packages. This air will be much more evenly distributed to all parts of the cellar than if the air were brought in above a solid floor. The false floor also permits the sprinkling of the earth floor to raise the humidity if that is necessary to prevent drying or shriveling of the fruit. This space beneath the floor can be sprayed with Bordeaux mixture to keep it "sweet" and to prevent the growth of moulds and other fungi.

Apple storage and packing house at Moses Fell Annex, Bedford, Ind.



Detailed floor plan. Note air intakes and 16-in. air ducts.

Two systems of ventilation are provided to permit experimental work upon their efficiency. One system consists of 16-in. air ducts leading to lower levels from which air can be forced through the storage on cool nights when the cooler air settles to these levels. The other system consists of air intakes from the ground level to below the floor line. These ducts or intakes are built outside the wall to avoid the loss of space inside. If concrete walls are built the forms for these ducts become expensive and the opening may be left at the ceiling line and a duct leading below the floor line can be made of wood or metal, inside the storage room.

The amount of this air intake is worthy of emphasis. It is not believed that the four 16-in. tile lines would provide sufficient air inlets without forced air circulation which will be provided here by means of electrically driven fans.

The surface air ducts are 1 ft. wide and 3 ft. or 6 ft. long, providing a total of 36 sq. ft. of inlet for the entire storage in addition to the intake provided by the double doors on the north side. In all probability this amount is far too low without forced air ventilation.

The efficiency of cool air storage depends upon the rate of change of air on cool nights. Frequent seasons occur when only one or two cool nights or frosty nights occur over long periods of harvest months, September, October, November. It is necessary, therefore, to provide for the rapid cooling of the storage room and the "bottling up" or holding of this cool air by the use of tight, well-insulated walls. Ample intakes, therefore, are necessary. Without forced air circulation it has been estimated by workers of the United States Department of Agriculture that 6 sq. ft. of window or intake are necessary for each 10 ft. of perimeter or outside wall. Too much intake can hardly be provided.

Outlets Are Important.

The outlets are as important as the intakes, as warm air must be removed before cool air can come in. The whole theory of natural circulation is based upon the fact that warm air rises and cool air, being heavier, settles. The cool air should therefore come in at the lowest point and the warm air should be taken off at the highest point. A 24-in. galvanized ventilator leads from the center of the ceiling of each storage room up through the packing room and package storage to the top of the roof. This provides a difference of 46 ft. in elevation between the intake and the top of the ventilator shaft and 36 ft. from the ceiling of the storage rooms to the top of the shaft. This provides a strong draft when outside temperatures are much lower than those inside. A fair rule on outlets is that they provide from one-half to two-thirds the size of openings of intakes, depending upon differences in elevation. Outlet space should be increased as the ventilator shafts are shortened.

Provision is made for the installing of an electrically driven fan in each ventilator shaft between the ceiling of the storage and the floor of the packing room.

A special provision for removal of

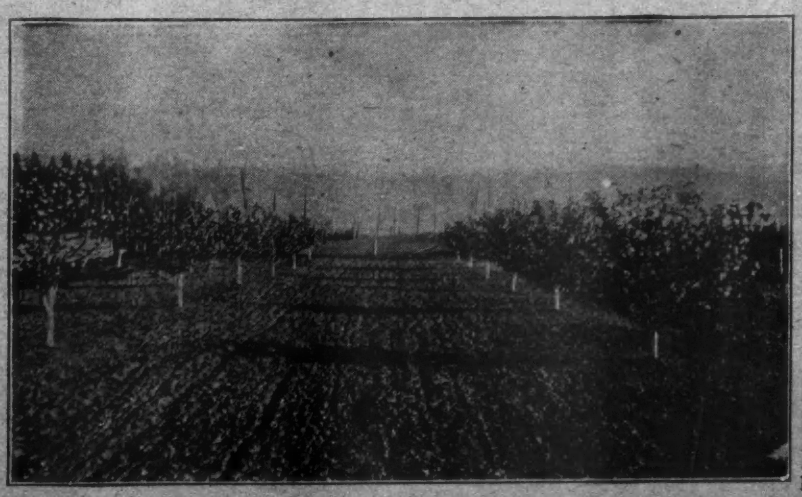
(Concluded on page 13.)

Fruit Growing in British Columbia

by H. Glynn-Ward

TWENTY-THREE years ago a young Frenchman who had done so brilliantly well in his own country that his name was well known among scientific agriculturists all over the continent, emigrated to the States to prove the worth of his ideas in a new country. He brought with him a whole bookful of diplomas and certificates besides two very rare possessions, the Cross of Merit of Montenegro and the Silver Medal of the S. P. C. A. from Havre, France.

But here, on the other side of the water, Destiny showed her mysterious hand in Leon Chevalley's career and at one fell blow deprived him of all his worldly wealth. With a wife and four small children to provide for, there was no time to be lost; the professor was obliged to turn his hand to the first job that offered—at a time when work was scarce and poorly paid. He dug potatoes for 35 cts. a day, and another day his little son taking him his lunch turned away with tears in his eyes at the sight of his father cleaning out pans in a condensed milk factory—his father, the professor, who had himself been superintendent of such a factory for twelve years in the Old Country.



The fifth year in a young apple orchard.

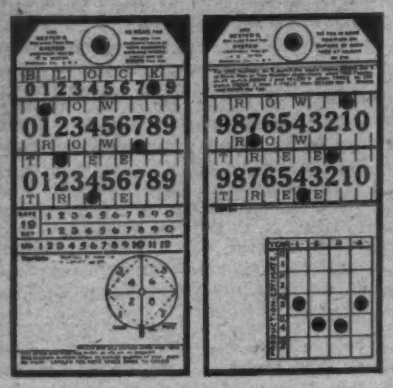
But Mr. Chevalley's grit and optimism were not based on such evanescent foundations as money and luck. He forced his way through to success and 10 years ago he came up over the border to help start the B. C. Condensed Milk Factory in New Westminster. This was only a temporary site, however, and very soon he moved the factory up into the heart of the best farming district in British Columbia, choosing a central spot for farmers, near railway and water, and settled at South Sumas.

Always reaching out for new ideas, Mr. Chevalley sold out his interest in the milk factory to the Borden Co., and began to look around the Chilliwack Valley for something that nobody else had yet exploited or had grown with no commercial success, and in Bartlett pears he found what he was looking for. He saw that

(Concluded on page 15.)

Analyzing the Citrus Grove

by Robert W. Hodgson



Tree tag combining tree identity with production record.

LEADERS in the citrus industry are to-day generally agreed that the greatest need confronting the industry is that of greater efficiency. And not only is it felt that improvement in efficiency is necessary on the part of the grower but on the part of the grove as well. Studies made from time to time have indicated rather conclusively that not more than 50 per cent of the trees in the average grove are efficient producers. One tree in every four is carried at an actual loss. If this 25 per cent loss could be eliminated and the efficiency of the remaining trees improved, the returns made by the grower would be markedly increased.

It is becoming more and more apparent that of fundamental importance is a change in attitude on the part of growers from the acre as the unit to the tree as the unit of the industry. Live stock producers long since have abandoned the herd or flock as the unit of the industry in favor of the individual itself, and have found that their greatest advances have been made by concentrating attention on the individual. This change in attitude is of far greater importance to the citrus grower than is true of any other crop, with the possible exception of the walnut.

"How much is a tree worth?" is a question which comes up for discussion frequently. As yet no one has satisfactorily determined the value of a full producing citrus tree. It can be gotten at in a number of ways, but the oil companies have perhaps arrived at as satisfactory an estimate as any in arbitrarily fixing a value of from $50 to $100 per tree for bearing orange and lemon trees. It is quite certain that if groves could be established with every tree as good as the best trees which now occur here and there, such a grove would return 10 per cent on a valuation of $10,000 per acre, in fact, at the present time orchards may be found where, taking all the trees good and bad together, returns of 10 per cent on $6,000 or $7,000 an acre valuations are being received.

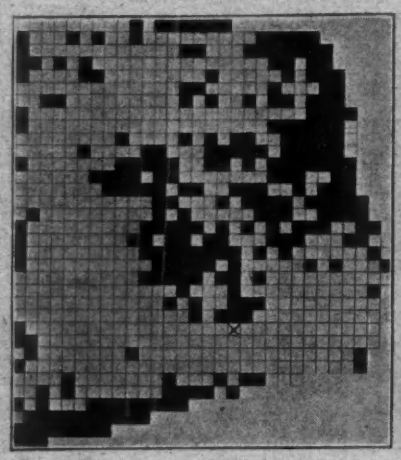
There is no phase of fruit culture where the capital invested and the operating capital are so high as in the citrus industry. With the limits of domestic consumption apparently nearly reached; with heavy outside competition inevitable; with unusual high capital investment and heavy costs of production, it is certain that the time is near when every citrus grower who remains in the business and expects to receive a profit will find it advisable to analyze his orchard with a view to increasing the efficiency of his trees. Growers here and there have already undertaken such measures and substantial progress toward developing a satisfactory system or orchard analysis has been made.

Establishing a Tree Identity.

No matter what the system may be, it must be based on the tree as the unit, which means that each tree must be known by a given symbol or number. The usual system used is that of tree numbering in which each tree receives two numbers, one designating the row, the other the tree number. It costs very little to number the trees and the establishing of an identity for each tree is absolutely necessary if any satisfactory system of orchard analysis is undertaken. The usual system used is painting the numbers on the trunks of the trees in letters from 2 in. to 3 in. in height so that they are easily read. Other systems which have been used include tags or labels attached to the branches or to the trunk. Live stock producers have long since come to identify their animals either by ear tags, leg bands or other suitable methods.

Production Records.

The next step in undertaking an orchard analysis is some system of production records, simple yet sufficiently comprehensive to furnish the grower the information necessary. Four years of production records are usually considered as the minimum necessary for a satisfactory analysis. Many systems of keeping production records have been devised, the majority of which are much too complicated for use by the average grower. The system in which the orchard is charted with a half-inch square for each tree appears to be particularly desirable. This square is divided into four quarter-inch squares, each of which is used for recording one year's production. The estimate method of recording production is by all odds the simplest method and is sufficiently accurate for purposes of orchard analysis. It is not necessary to pick the fruit from each tree separately and to count the boxes and fractional parts. The grower can carry in mind what is a full crop and when the trees are carrying a full crop can indicate this by an appropriate symbol. A good system is that in which the crop is recorded in figures from one to five —five meaning a heavy crop; four a good crop; three, medium crop; two, poor crop and one, very poor crop. With this chart in hand, the grower should go through the orchard before any fruit has been picked, filling in the blanks with his estimate of production. When three or four years' production records are available, the grower is in a position to analyze his grove and to classify the trees according to production.



Black squares represent unprofitable trees, light squares, self-supporting.

Post designating block, row and tree.

Segregation According to Production.

The trees should then be arranged in classes, according to whether production has been consistently poor, medium or good. Trees with a poor production are clearly unprofitable. Trees with medium production in all probability are barely paying expenses. The profits from the grove will be returned by the trees with good production. Analyses recently made of several citrus groves according to this method have shown that in one case an orchard of 100 acres, considered to be one of the best paying orchards in the section and actually netting $500 to the acre and better during the past five years, contained 32 per cent of trees which were either unprofitable or merely paying expenses; 68 per cent of the trees were profitable and had to make up for the loss on the unprofitable trees, as well as to return a profit for the entire acreage. Another orchard of 17 acres showed 74 per cent of the trees either unprofitable or only self-supporting with but 26 per cent of the trees actually returning a profit.

Determining Causes for Variation.

Once the grower knows which trees are profitable and which are not, he has a basis for attacking the problem of bringing all of the trees up to the productivity of the best trees. The causes for failure to bear full crops may be grouped roughly into two classes— inherent and environmental. In order to determine which of these causes is of importance it is necessary to determine the distribution of the good and poor trees in the orchard. By inking in the production estimates on the chart in three contrasting colors, this is easily determined. If the poor producing trees are not found grouped together in zones or areas, streaks or otherwise, but occur here and there, scattered according to the laws of chance throughout the orchard, in all probability the causes are inherent. If the poor trees are found in zones or areas, the probabilities are that the causes for failure to bear full crops are of an environmental character. The grower is then in a position to undertake a further analysis for the purpose of determining specific remedies to apply.

Inherent Causes.

Inherent causes for failure on the part of trees to bear profitable crops may be due to stock or scion. A certain percentage of citrus trees are budded on improper stocks and are either permanently stunted or fail to set crops. A poor bud union is frequently an indicator of such a condition. The size of the trees is another indication of lack of congeniality between stock and scion. It may be possible under certain conditions to bring these trees into bearing by inarching, but at the present time the best recommendation is to pull the trees out and replant. Failure to bear satisfactory crops may be due to inherently low productivity due to the trees having been budded from off-types or low-yielding strains. Where trees have satisfactory bud unions and sound healthy root systems and still fail to bear good crops, the best remedy to apply is usually that of top working.

Where groups of trees are found to

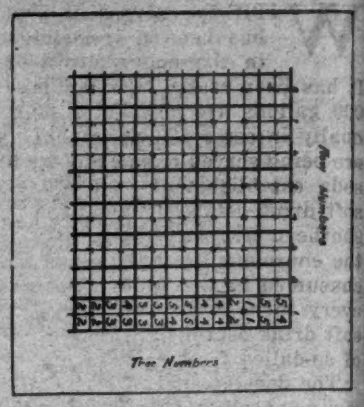


Chart showing trees and one year's production estimate.

be bearing poor crops, the probabilities are that the underlying causes are environmental in character. The most common causes of this character for failure to bear are connected with soil differences which render irrigation practice inadequate to meet the needs of the trees, or fertilization insufficient to properly care for their needs. A careful examination of the soil should be made to determine the probability of the cause being due to soil conditions. A change in irrigation practice may be what is necessary to bring the trees into good bearing. Quite frequently extra fertilization will be found to be the secret. In some cases zones of poor yielding trees have been found to coincide with areas from which the top soil was scraped at the time the orchard was planted. Resurfacing has been found in such cases to materially increase the yields. Other causes which may contribute to failure to bear satisfactory crops are trunk and root diseases, including gum disease, scaly bark and shell bark and pests, such as gophers.

Tree History Records.

In connection with this method of orchard analysis, the keeping of a simple set of tree history records will prove to be almost invaluable. An annual or semi-annual individual tree inspection should be made, using a simple form of record on which is indicated the conditions which require treatment. Every new tree planted should have the date of planting set down which will at once indicate the replanted trees as against runted trees. Trees affected with any special condition in the way of disease or pest infestation should have this fact noted, together with the dates of treatment and simple record of treatments used. The longer such a system is carried on, the more valuable it becomes. With such a system the grower is in a position to know exactly what the efficiency of his orchard is. He knows the percentage of profitable trees which he has; he learns the reasons why his medium to low producing trees fail to bear full crops and applies the practices necessary to bring them up to full productivity. He is in close touch with each tree in his orchard and knows its date of planting; what diseases or pests have affected it; when treatments were made and what the treatments were. He is in position to check up accurately on the results which he is securing from different treatments. In short, through the use of this system of orchard analysis, involving the keeping of simple production records and of simple tree history records, he is able to secure the fullest possibilities from each and every tree in his orchard, changing the unprofitable trees to profitable, in many cases changing an unprofitable grove to a profitable one. It is certain that as competition increases and land values rise, some such form of orchard analysis will become increasingly necessary to the up-to-date, progressive citrus grower.

Our Editorial Comment

Soft Drinks

WITH the advent of prohibition there has been a tremendous stimulation in the manufacture of soft drinks. It has been stated that not less than 70,000,000 gallons are now being manufactured annually in some 10,000 establishments. These are being served from counters in over 100,000 soda establishments and a large number of soft drink establishments. During our recent southern trip we were greatly impressed with the enormous amount of such drinks which is consumed in the South. Seemingly at almost every turn in the road there came to view a soft drink establishment where a great variety of so-called fruit drinks could be procured.

The development of this soft drink industry is a menace to the fruit industry because these drinks are masquerading as something which they are not. Practically all of them are synthetic and artificially flavored and colored and yet are sold so as to make the customer think that he is getting a real fruit drink. In the early days soda pop was consumed principally at baseball games and similar affairs. It was largely a watery drink of light flavor and was a real thirst quencher. Today, however, we find a large group of drinks which really are not thirst quenchers and which are purely imitations. The fruits more commonly imitated are the orange, grape, lemon and lime. Such drinks practically contain none of the pulp or juice of the fruit. Other flavors extensively used are vanilla, kola nuts, coca leaves, neroli, cinnamon, prickly ash bark, geranium, ginger, sassafras, sarsaparilla and others too numerous to mention. The flavors are generally made up in alcoholic tincture, a few drops being sufficient for a bottle. Formerly such drinks were clear, but in order to have them take on the appearance of fruit drinks, which become somewhat clouded, quantities of starch, Indian gum, acacia and tragacanth are used.

Furthermore, the display advertising is very misleading. Beautiful pictures of orange groves, of vineyards and of bunches of grapes are displayed in high colors. Not only that, the advertisements often claim that the drinks are very nutritious, wholesome and health-giving. I was astonished recently in the South to see one manufacturer claiming that his drink was as nutritious as any equal value of food which could be bought on the market.

There is a definite program on the fruit industry before the growers. First, we need state and national legislation concerning the labeling and advertising of such beverages. Second, we, as fruit growers, need to see that there is put on the market more real fruit beverages, attractive in flavor and appearance and sold at popular prices. The juice of apple, pear, grape, orange, grapefruit, loganberry, sour cherry and similar fruits can be used in such manufacture. In this issue we have two articles by Messrs. Chenoweth and Cruess, which all should read, showing that it is possible to make such beverages at a relatively low price. Our big fruit season is at hand and it is time for the fruit industry to wake up to a real menace.

The South Land

YEARS ago the southeastern states produced practically nothing but cotton, tobacco and some corn. This south land today, however, is waking up to the fact that it is a land of great horticultural opportunity.

We recently had an opportunity to make an extensive automobile trip through Tennessee, Georgia, the Carolinas and Virginia and our readers are going to benefit from this trip in the next few months. We will write up our observations under the title, "Rambles of a Horticulturist." This month we are giving our readers the benefit of our observations in Tennessee. We also have an interesting article concerning the Virginia meeting and an article on "Italy in the Ozarks." We shall follow these articles in the next few months by an extensive series on southern horticulture.

Fruit growers have known for some time that Florida, Missouri, Arkansas and Virginia are fruit states. It is only recently, however, that they are realizing that Georgia, the Carolinas, Kentucky and Tennessee are going to be heard from. These states will become just as famous as those already mentioned by the production of huge quantities of apples, peaches, pecans, melons and figs. The South has a splendid climate, a good growing climate, an abundance of cheap land, and a fine local market that is rapidly expanding with the growth of large commercial centers. The South has a field of its own in that it can produce some of our very earliest peaches and apples, which are offered to the trade in our great markets of the North. California alone is the only section of this country which will offer keen competition.

Don't Be Pessimistic

EVERY industry has its ups and downs, no line is always profitable. While the fruit industry on the whole is perhaps the most profitable line of agriculture, there will be seasons when certain types and varieties of fruit will not be grown at a profit. There are certain groups of farmers in the country that do not seem to realize this truth and are continually agitating the cause of the farmer and can be generally classed as "calamity howlers."

If this policy on the part of a very small percentage of our farmers is continued, it will in time shake the confidence of American bankers and business men in the stability of our agriculture, it will tend to curtail credits, it will make it harder and harder for the farmer to buy to advantage as regards price on the one hand or time payments on the other. Agriculture has been improving rapidly, it will adjust itself to the new world conditions. Farmers can and will work out their own problems which are largely economical and not political.

There are always politicians who seem to feel that the only way they can prosper and be elected to office is to fan the flames of discontent in some form or other and to promise remedies which neither they or anyone else can apply. There are at times some so-called agricultural leaders who seem to feel that their leadership is in jeopardy unless they too can dwell on this misfortune and discontent and offer remedies which they alone can carry out.

As farmers we must realize that whenever we produce more wheat, hogs, milk or apples than the normal channels of trade can handle, we are doomed for a jolt in prices, just as is true of a manufacturer if he manufactures more shoes, automobiles, straw hats or pianos than the nation can purchase. Whenever this happens, depression follows. These jolts are often hard but, happily, generally result in great good.

If certain groups of farmers now in distress will learn to diversify their crops and not put all their eggs in one basket and if they will learn to organize and thus obtain a wider distribution and standardization of their product, they will reap great benefits, for by proper organization and the application of up-to-date merchandising, the market is often given a stimulus. New outlets can often be developed by concerted action. It must be remembered, however, that even co-operative organizations at times cannot guarantee profitable prices. The co-operative movement will relieve the situation greatly and perhaps save complete collapse at times but might not be in position, owing to world-wide production and general conditions, to sell the entire tonnage at a profit to the producer. Co-operative bodies, however, do more than any other group of handlers in relieving the situation.

We would suggest to some groups of farmers now in distress that they diversify their crops more, that they use more machinery and less labor, thus lowering their cost of production, and perhaps farming a less acreage but with a greater unit of production. If these steps are taken, we feel that some relief is sure to be realized. Practically all figures and statistics being gathered at the present time show that agricultural conditions are steadily improving and that today it is only in a relatively few lines that distress is found.

Analyzing the Orchard

"ANALYZING the Citrus Grove" is the title of an attractive article appearing in this issue. This article is of value not only to orange growers in such states as California and Florida, but it should be of interest to fruit growers of all classes.

In the past we have been prone to use the acre rather than the tree as our unit. We should reverse this practice and in the future consider the tree as our unit for study. Livestock men long ago learned that it was not the herd but the individual which must be studied. How often in visiting an orchard the owner leads you to certain trees which he exhibits with pride and which he claims are very productive. Rarely does he lead you to trees in the orchard which have never been productive.

There are a great many unproductive trees in practically every orchard. The most successful orchardist of the future is going to be the fellow who can get a high average tree production of good quality fruit. He thus immediately lowers his cost of production per unit and at the same time produces something which the consumer wants. There is always a good reason why a tree is unproductive. Search diligently for the reason and apply the remedy. It may be due to some local condition surrounding the tree but too often poor orchard management is the cause of the trouble. Occasionally the unproductiveness of a tree is due to some inherent weakness. Better growing methods, combined with a little individual attention to details, will generally be found to be an adequate remedy.

A First-Class Pack

THE big apple crop will soon move into the channels of trade. On the whole, we believe the quality will be unusually good. Growing conditions both east and west this past year have been very favorable to the production of large fruit free from blemish, of high color and good keeping qualities.

The results to be obtained by the growers this year will depend much upon the condition of the fruit when it reaches the market. A market is easily glutted from poorly grown, graded and packed fruit. These same markets will handle an enormous increase in tonnage if the fruit is picked at the right time, handled rapidly and rigidly graded and packed so that it is delivered to the market in prime condition. A good price and a strong demand can be expected for fruit of this kind. It is indeed very foolish to ship to market poorly graded and packed fruit as it practically never pays packing, shipping and selling costs, leaving nothing for growing expenses.

DODGE BROTHERS ANNOUNCE IMPORTANT IMPROVEMENTS

Dodge Brothers have not simply brought out a complete new line of motor cars. They have done something infinitely wiser and better than that.

They have brought new beauty, new riding ease and new mechanical perfection to the product on which their reputation as builders has been founded.

They have built a better and a more desirable line of motor cars—yet basically and fundamentally the identity of their product remains the same.

The same sturdy engine is under the hood; the same dependable chassis, improved in numberless details, underlies the body.

But the rear springs—now underslung—have been materially lengthened. The wheelbase, too, is longer, and the combined result is a notable improvement in riding qualities.

Bodies of all types have been designed to give improved appearance, and greater comfort. Lower, longer, with deeper seats and more leg room, the lines of these new cars are low-swung and graceful—the interiors are comfortable and roomy.

New head lamps and fenders, especially designed by Dodge Brothers to conform with the general lines of the car—a long straight hood and cowl effect—longer and wider running boards—unusually wide doors—combination stop signal and tail lamp—and instruments attractively grouped on raised panel—are a few of the numerous body innovations common to all types.

Combining these features with important mechanical improvements too numerous and technical to enumerate here, it is not extravagant to predict a reception for these cars unprecedented in automotive annals.

DODGE BROTHERS

What California Learned in Florida

by James E. Hungerford

"IN Florida we have a rival—a real competitor for the citrus trade of the United States," declares C. E. Utt, prominent Tustin citrus expert, who was the principal speaker at the recent joint meeting of the El Modena and Villa Park orchard centers, attended by more than 400 citrus men. He prophesied a possible change, or at least improvement, in the method of handling California citrus fruits, which he deems most necessary if California is to hold her own in the citrus game.

"Florida fruit and packing methods are gaining favor with the consuming and buying public," said Mr. Utt, who was a member of the California citrus party that recently visited Florida and the Florida citrus districts and packing-plants. "In some parts of the country, the consumers of California oranges, in comparing them with the Florida product, declare them to be sour and tasteless; but the fact remains that both the California and Florida products are in favor with the consuming public, with small difference as to choice.

"Florida is in the fruit business to stay, unless something occurs which wipes her groves out. Southern California is in the same boat. We are in the game to stay, unless something unforeseen happens—for instance, an infestation of the Mediterranean fruit fly, which would put us out of the running completely. Florida is imperiled by the cold "northerns," for frost is her worst enemy. But as long as normal conditions prevail, we will be rivals and competitors in the citrus markets of the United States.

"It is deplorable that we are shipping so much frozen fruit, and shipping so early. We are also placing too much trash on the market. When these conditions are removed, I think we will be in a much better position to compete with our worthy opponent.

"I do not believe Florida will ever drive us out of the citrus business, but I do believe she will drive us to improvement in our present methods. We will have to ship better fruit, and we will have to delay the opening of the Valencia season. Florida's strides toward market supremacy have been remarkable in the past few years. They are planting ten acres to our one of citrus fruits, and most of it is Valencia oranges and grape-fruit.

"Their worst problem is drainage; they have entirely too much water on their lands, though in certain months they are also affected by drought. To solve the drainage problem, Florida must quadruple her drainage system. The cost will be enormous, running into many millions of dollars.

"The topography of the citrus-growing country of Florida is rolling. The soil is sandy; in some places very heavy, but apparently very well adapted to Valencia oranges."

Mr. Utt presented some figures as to the cost of citrus culture in Florida, declaring that from impressions he had received on the trip, it costs the large growers at least 50 cents a box to produce their oranges, not reckoning the interest on their investment. These figures, he declared, were obtained from some of the big producers, and for that reason might vary when applied on a smaller scale. He said that it cost Florida growers about $125 an acre for spraying, plowing and fertilizing, though of the latter they have done but little. The packing costs, he said, are about the same as in southern California, the freight rates, however, being lower, due to the nearness of Florida to the eastern markets. This, of course, is an advantage that will have to be considered by California shippers, growers and packers.

DESTROY the peaches that fall to the ground. They are a source of danger in that they carry over the brown rot fungus.

PERFORMANCE in this new Hupmobile is far and away finer than the notably fine performance of all the Hupmobiles that preceded it.

New beauty of line and curve and finish, in a longer, larger, more impressive car—easier riding and greater comfort, in front and rear alike.

A car so much more fleet in getting under way, so much smoother and steadier in the straight-away than even its worthy predecessors, that it is worth any man's time to put these obvious superiorities to the test.

The New Hupmobile

New body designs, with graceful curves displacing bevels and corners; higher radiator, hood and cowl, drum-type lamps and the latest style of crown fenders, a new-shape top which has no upright rear bow—all these combine to make the new Hupmobile the most attractive car we have ever built.

The wheelbase lengthened to 115 inches provides additional room and comfort; and, combined with lengthened springs and a new distribution of weight, makes easy riding a certainty.

The results which give the Hupmobile still greater distinction as a superior performer and superior value, are achieved in characteristic Hupmobile fashion.

There is no departure from the tried and true principles on which Hupmobile success has been solidly built for 15 years.

Instead, there is a measurably higher degree of perfection wrought out of these principles.

The engine is a better engine, with its heavier, counter-balanced crankshaft and its pistons and connecting rods of light-weight alloy.

It eliminates noticeable vibration to an unprecedented degree because of its nice operating balance.

It is more powerful, and it is even livelier and quicker in the getaway and in acceleration.

A real triumph of gear-shifting is recorded by reason of the new two-plate clutch, which makes this operation vastly easier and absolutely silent at any and all speeds.

The transmission gears themselves are larger and heavier. They are high carbon alloy steel, oil treated and tempered—the best and costliest hardening and toughening process known.

Chassis staunchness is assured by a rigid frame of 6-inch depth, with five heavy cross members.

New, metal-framed curtains fit even more closely than the always close-fitting Hupmobile curtains, and are stowed flat and taut to keep the lights from chafing.

Finish on all models is a new Hupmobile blue, with a striping of lighter blue.

The new Hupmobile is supplied in seven types:—

The Touring Car; the Roadster, a smart, rakish model entirely new; the Special Touring, and Special Roadster, with disc steel wheels, nickel-plated trimmings and other special equipment; the Sedan, a gem among closed cars; the Coupe for four passengers; and the Coupe for two passengers.

Hupp Motor Car Corporation, Detroit, Michigan

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Mr. H. H. Tanner is a R. F. D. mail carrier in Milledgeville, Georgia. He drives his car over all kinds of roads and in all kinds of weather. He puts his tires to the severest sort of test. Here is what he says about Kellys:

"I have used practically every standard tire in my twelve years of auto driving in the R. F. D. mail service and my conclusion is that there is no tire made that will give the service and satisfaction that the Kelly-Springfield will, so when I bought my new Superior Chevrolet, eight weeks ago, I told the dealer that I wanted him to change the tires for me so that I could 'keep smiling with Kellys.'

"Kellys are the best tires in the world for the roughest service in the world because we hit all the rough spots going to the roadside mail boxes and then the excessive stopping and starting is hard on tires."

Every farmer knows the hard usage which tires receive on a R. F. D. mail carrier's car. That is why we have printed this letter here. If Kellys can give satisfaction for this work, they will give satisfaction anywhere.

It costs no more to buy a Kelly

Virginia Meeting

by C. I. Lewis

FRUIT growers to the number of at least 200 met August 1st for a field day with James Craig at his famous Rose Cliff Farm, Waynesboro, Va. There were representatives from Maryland, North Carolina and West Virginia, as well as a large body of growers from the Shenandoah Valley. Had it not been for a three days' rain, at least 1,000 growers were expected for the meeting. The two speakers on the program were C. I. Lewis, managing editor of the AMERICAN FRUIT GROWER MAGAZINE of Chicago, who spoke on Some Modern Tendencies in American Horticulture, and Prof. G. S. Ralston, Department of Horticulture at Blacksburg, who spoke on the Problems Facing Virginia Growers.

One very interesting feature of the field day was the orchard heating demonstration. Mr. Craig has been an enthusiast over orchard heating for many years. Since 1911 he has been protecting the lower elevations of his orchard successfully. He feels that he has saved many crops by this procedure and believes that many growers in Virginia who have been losing their crops could at least save portions of their orchards if they would apply up-to-date orchard heating methods. The American Can Co. had their Scheu smokeless orchard heaters on the ground, which were demonstrated by Mr. Cottrell of Oakland, Calif. Mr. Smith of the Skinner Mfg. Co. of Florida, was present with the coke heaters handled by that firm, and Piet Vlagg of Tampa, Fla., was there to demonstrate his new heater. These heaters were lighted and the growers were pretty well satisfied that a large amount of heat can be generated in this way. There were other heaters on display such as the Troutman and Hamilton.

A fruit grower can well afford to spend a day or several days in the Rose Cliff orchards. These comprise some 250 acres, or 10,000 trees. The trees have made a tremendous growth. It is hard to believe that the older trees are only 22 to 33 years of age, they are of such a large diameter and have such a tremendous spread. Mr. Craig has one of the finest orchards in America. He has learned to produce that happy combination of obtaining a good wood growth and at the same time harvesting a heavy crop. His trees are heavily loaded this year with large, clean fruit. The trees are making a fine wood growth and the foliage is large and clean. Intensive cultivation, coupled with the growing of cover crops, cow peas and the use of such fertilizers as nitrate of lime, floats or acid phosphate are partly responsible for his results. Mr. Craig, however, has learned to keep his trees open and to distribute the bearing wood all through his trees. He keeps tractors in order that he may cover the ground rapidly and for his spraying in the future he is planning on using auto trucks, upon which will be mounted large Hardie tanks with a Mogul pump which is geared to the auto truck. Some of the hauls in the Rose Cliff orchards are extremely long. Mr. Craig is able to handle 2,400 gals. a day and uses fine nozzles in order to get a mist spray. At the present time he is making unusual experiments in spraying with lime sulphur, Bordeaux, various arsenates and sulco V. B. He feels that this latter spray is giving him unusual results. He seemingly has learned to use it successfully where, under many conditions, others have failed. He feels that the sulco not only controls his fungus diseases but that it kills the eggs of the borer, and he is practically having no trouble with blister canker since he has used this spray. In fighting borers in the roots of trees he has been pulling the dirt away and painting the crown and upper portions of the roots and trunk of the tree up to about a foot from the ground with a refined pine tar. Some of his neighbors are using this same substance in fighting apple borers.

Mr. Craig feels that he is solving the black root rot disease which is so troublesome to orchard trees. He says he believes that powdered charcoal is a good remedy. He also uses sulco, diluted 1-10, applying some 25 to 30 gals. on the ground around the trees which are attacked by the disease.

Perhaps no man has made such a study of bridge grafting as has Mr. Craig. He practically loses no trees in his orchards. When he finds that root rot or some other trouble is ruining the roots, he immediately bridge grafts the healthy portions of the roots into a normal top. He has saved trees against winter injury, mice and disease injury in this way and one will find some of the most unique grafting in America done in this orchard. After the scions are inserted and waxed, he uses wide strips of adhesive tape to cover the ends, keep out the water and prevent woolly aphis from getting a foothold.

While there are many varieties in the extensive plantings, the bulk of the plantings consist of York, Lowry, Rome, Delicious, Albemarle Pippin, Winesap and Stayman. We asked Mr. Craig if he were starting a new orchard in the district what he would plant and he said it would be Lowry, Delicious, York, Winesap, Stayman and Rome. He thinks very highly of the Lowry. It is a good producer with him, the tree grows fairly open, thins itself nicely and the fruit is of high quality, good finish and is a pleasant eating apple devoid of sharp acid. He sold last year his Lowry and Delicious at $3 to $3.50 a box. His Yorks are a very heavy producer and he feels that for his mountain hillsides he can grow the Rome second to none.

The Rose Cliff orchards are splendidly equipped with farm buildings, packing houses, spray sheds, oil reservoir tanks and a very fine equipment of tools for handling his orchard work. Mr. Craig is going to make August 1st his annual field day and he is now laying plans to entertain 1,500 growers in his orchards next year.

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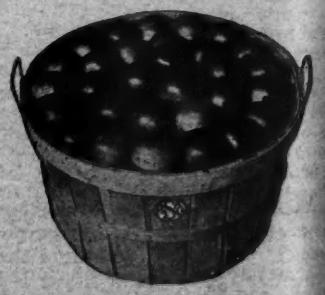

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Apple Storage

(*Continued from page 7.*)

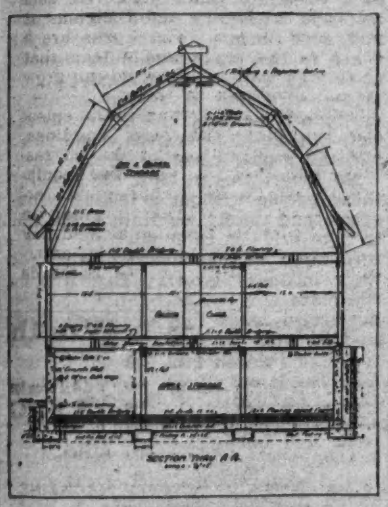
the ventilator shaft from the packing room floor during the day permits that section to be raised by pulleys telescoping within the section above. A trap door then closes the vent, preventing the loss of cooled air from the cellar and providing a solid floor upon which to work.

Building Materials Used.

Insulation here does not provide for a long storage period during warm weather, as walls are solid and of Bedford stone (quarried on the farm) 12 in. thick. The ceiling of the storage room consists of two layers of tongue and grooved flooring with paper between. Mill shavings are packed between the joists filling the space between storage ceiling and packing room floor. All doors are regular insulated cold storage doors except the large double doors which were built up on the job.

The entrance and central room provide space for cooling warm fruit during at least one night before it is stored in the two storage rooms on either side. Provision of this kind or stacking the fruit outside over night greatly aids in maintaining better storage temperatures in the permanent storage rooms.

A feature of the packing house floor which makes for efficiency is the entrance of fruit at the west end under



Cross Section of Packing House.

a covered platform and its direct movement past the graders and packers to the elevator or to the south door if it is to be hauled direct to market. Too frequently much time and labor is lost by fruit doubling back on its regular path.

Experiments are being planned to measure the efficiency of this plant. They will include the rate of change of air by the two systems of ventilation, both with and without the forcing of air through the ducts by fans. The amount of air and time required to cool the fruit will be recorded at different outside temperatures. Observations on relative humidity and its effect upon keeping quality will be made.

An attempt will be made to cool the storage and hold it at as near 33 deg. F. as possible, although experimental evidence on keeping quality at higher temperatures will be secured.

Proper storage facilities make possible a longer marketing period (at this Bedford house three sale days per week reduced the time devoted to selling) and of more importance, they make possible a more efficient use of labor by providing for handling fruit, after it is picked, in a more leisurely manner. Proper storage facilities will also make it possible for fruit growers to provide consumers in their community with a better grade of fruit over a longer period of time, thus reducing the necessity for the importation of large quantities from distant states.

The efficiency of this storage in southern Indiana will be reported on from time to time.

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Chevrolet Superior Light Delivery, with four post body was built especially for farm needs. Although not a heavy-duty truck, it has the space and power for a big load, which it moves fast at a very low cost per mile. Its engineering features are modern and complete: powerful motor, electric starter, standard transmission —3 speeds forward and one reverse, demountable rims and extra rim, etc.

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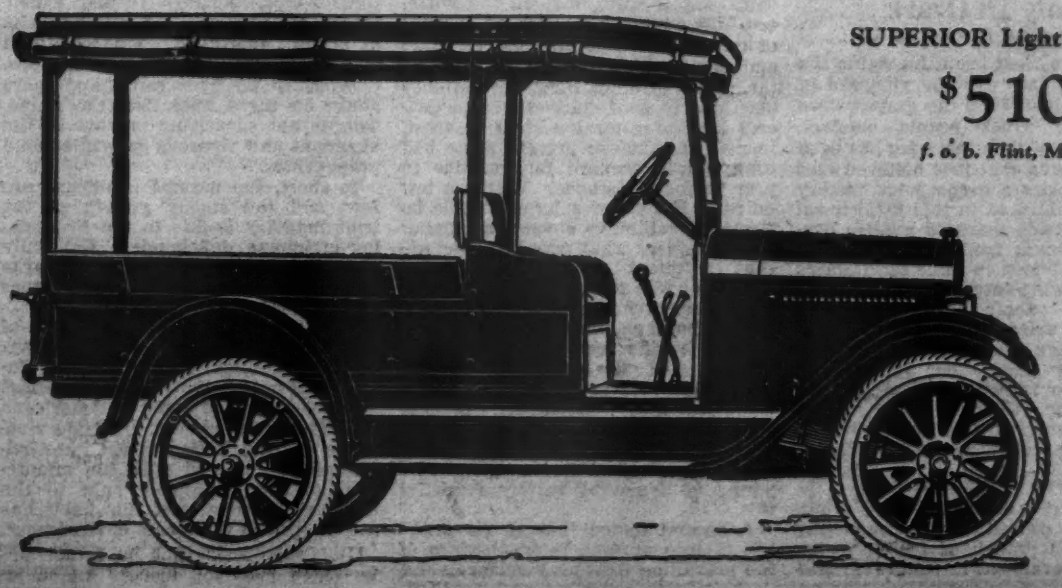

SUPERIOR Light Delivery

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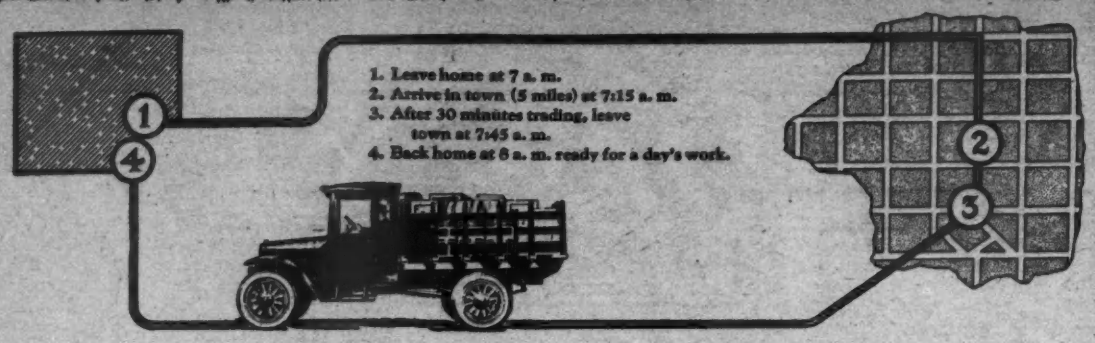
1. Leave home at 7 a. m.
2. Arrive in town (5 miles) at 7:15 a. m.
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INTERNATIONAL HARVESTER COMPANY of America (Incorporated)

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Italy In Ozark

(*Continued from page 6.*)

One of the most beautiful sights the writer ever saw was the vineyard of Mr. Piazza just when the grapes were hanging in great purple clusters. The success of the enterprise has been so encouraging that it is believed that in a few years a grape juice factory will be established in this little town.

While outside markets receive considerable Ozark fruit, it is true that the district has seen some sad failures in fruit growing enterprises, both large and small. Some have been abandoned for want of capital to carry through years when late spring frosts killed early buds. For this reason peaches are rather confined to the south portion. Cherries and pears are said to be safer in this respect but do not receive their share of attention.

Some Ozark Lessons.

Strawberries are found most profitable when raised on a community basis. This branch of fruit growing is highly developed in southwest Missouri and is spreading. In the northern hills apples are a risk on account of late frosts. But the failures, large and small, which have so far retarded the spread of orcharding, have oftener been due to poor cultivation and general lack of attention than to frost. Indeed, the Ozarks present some bad examples of orchard failures due to poor business methods. Within a few miles of Knobview a large outside interest attempted to develop a number of orchards by what may be called absent treatment. In this case absent treatment was found to be a poor way to develop orchards.

The thorough understanding of the plain scientific requirements of fruit growing that is essential wherever trees and vines are raised for profit, is particularly important in the Ozarks. Some of the soils are underlain by a hardpan which is unfriendly to root growth, but the persuasive power of dynamite readily remedies this.

A second factor that shortens the life of tree or vine is the texture of the prevailing light gray surface soils, from which moisture readily evaporates. On this account cultivation is of prime importance. This condition also calls imperatively for cover crops.

Probably no fruit can stand more abuse on these hills than the grape. This is not surprising in view of the abundant and vigorous growth of wild grape vines.

In short, the natural handicaps are few, and the steady growth of the fruit industry is due to the overcoming of human deficiencies. Generally the tillable portions of the Ozarks yield rich returns in fruit when proper care is used.

In this particular the experience of the Knobview Italians is suggestive. Their acquaintance with vines in Europe was not on the large commercial scale so often attempted by Americans with disastrous results. Hillside vineyards on tiny Italian farms were cultivated and pruned with the minuteness of detail possible only to the small vineyardist, and this habit has served well in their new environment. In the earlier years when their lack of means confined them to a fraction of an acre of vines apiece, they were laughed at by their American neighbors for their painstaking and laborious methods.

Italian Plan Best.

The American capitalist, fired with zeal and inflated with paper and lead pencil profits, planted 10 or 100 acres, in exactly the same manner as so many tomato plants. The Italian first plowed his field, then dug roomy holes; in the bottom of each hole went such fertilizer as he could find—a little manure, some oak leaves, trash of any kind, such as his neighbors burned or allowed to rot. Earth was mixed with this and the vine, carefully set above, had vitality and ventilation below and all around it, not to mention a loose deep soil reservoir for holding moisture. Some of those first vines are today the best producers. The older ones, heavily loaded with the finest quality of Concord grapes, make a very pretty sight, as the writer can testify. Naturally, the labor of cultivation, pruning and spraying has not been spared, and as their improving finances permitted, commercial fertilizer has been added.

But while these patient people have clung to their own methods, they have not failed to absorb information and assistance from outside sources. For several years their work has been a matter of interest to state officials, particularly Prof. F. W. Faurot, in charge of the Missouri Fruit Experiment Station at Mountain Grove. Himself and assistants have spent time and such means as the state could spare in the study and advancement of this as well as other similar enterprises. He lent a power spraying machine last season and personally assisted in the improvement of old vines and the proper planting of new ones.

No American can view the work of these people without a feeling of respect, and surely no Italian will fail to take pride in their success. In future more will be heard of them as their business grows. This will be the more true on account of the fine new state roads that are being built in Missouri. One of the best known roads in the state is the old Springfield Road, out of St. Louis, through Cuba, just east of Knobview, St. James, next west, and on through Rolla and Lebanon, all towns on the Frisco railroad, as far as Springfield, in the southwestern part of the state. When this road is finished a great many automobile tourists will travel through the beautiful Ozark Hills and in that pleasant trip will see no finer example of thrift than the vineyards of Knobview.

Apple Scab

APPLE scab is a disease which may develop very late in the season. This is especially true when rains are accompanied by warm weather. These late attacks of the scab often appear as red spots on the fruit and in the early stages are hard to differentiate from San Jose scale. Later on these will develop and will take on the typical scab formation. Scab will often occur in storage in early fall where the conditions of moisture and heat are ideal. Every effort should be made to control scab. A good spray schedule of Bordeaux or lime sulphur is generally sufficient.

Italian Lemons

THE bulk of lemons entering into world trade are from Italy. Her exports in both 1920 and 1921 were approximately 4,000,000 boxes, which was about half the pre-war figure of 8,000,000 boxes, according to reports to the United States Department of Agriculture. Imports into the United Kingdom amounted to 1,000,000 boxes in 1921, as compared with 700,000 boxes in 1920 and 900,000 boxes in 1913. Germany and the Netherlands are heavy importers.

FRUIT growers of Kentucky will hold a big fruit meeting at Henderson on September 3rd and 4th.

In British Columbia

(Continued from page 7.)

where apples may be successful only in a good year, these pears grow to complete perfection in this particular locality.

In 1919 he bought 140 acres at South Sumas, more than half of it a wilderness of huge fir and cedar stumps. That spring he started clearing on a large scale and with donkey-engine and powder galore transformed the wilderness in six short weeks into a profitable potato patch all ready for the fall planting of the young pear trees.

Pioneer Pear Grower.

Here today is the first commercial pear orchard of Western British Columbia, thirty-five acres with 2000 Bartlett and 800 Bosc trees. As Boscs are one of the strongest pollinizing varieties of pears, he had every four rows of Bartletts inter-planted with two rows of Boscs so as to make pollination more certain. And as the Bosc pear tree in the States has a name for being peculiarly liable to pear blight, all the lore of rooting and budding known to science was called into use to ensure Mr. Chevalley's trees from blight. The blight-resisting root of the Japanese pear was taken, grafted a few inches above the ground with the "Surprise" variety of pear onto which was again grafted the Bosc pear.

The trees were planted 20 feet by 27 feet apart in order to get a return from the land before the trees come into bearing, 3,000 gooseberry bushes and 2,600 currants were planted in the twenty foot space and loganberries and blackberries were planted in the twenty-seven foot space. Furthermore, in order to have a crop off the land in the first year of the plantation, two rows of potatoes were planted between the trees and the berries.

The first year the care taken in the selection of the seed gave such results that his seed drew the attention of the Dominion and Provincial authorities and the Hon. E. D. Barrow, Minister of Agriculture, stated that Mr. Chevalley had raised the best potato seed in B. C. He specialized in Netted Gem and Golden Coin and some of his Netted Gem sold in Seattle by a buyer brought $10 per ton over the Yakima potatoes. All this goes to show that Mr. Chevalley's secret for successful growing is to start in with the best strain that can be procured. He is experimenting with new varieties of raspberries imported from New York and Quebec and this spring hopes to put another ten acres into raspberries. The two-year old plantation will yield 60 per cent of a full grown crop and the weather conditions having been of the best for plant growth, the progress made by trees and plants is quite remarkable.

Selected Good Soil.

According to nursery men this piece of land is specially adapted for the growing of small fruits and pear trees and the highest yield possible will be obtained. The soil is a sandy loam, a river deposit, of drainage so perfect that it can be worked directly after the heaviest rain.

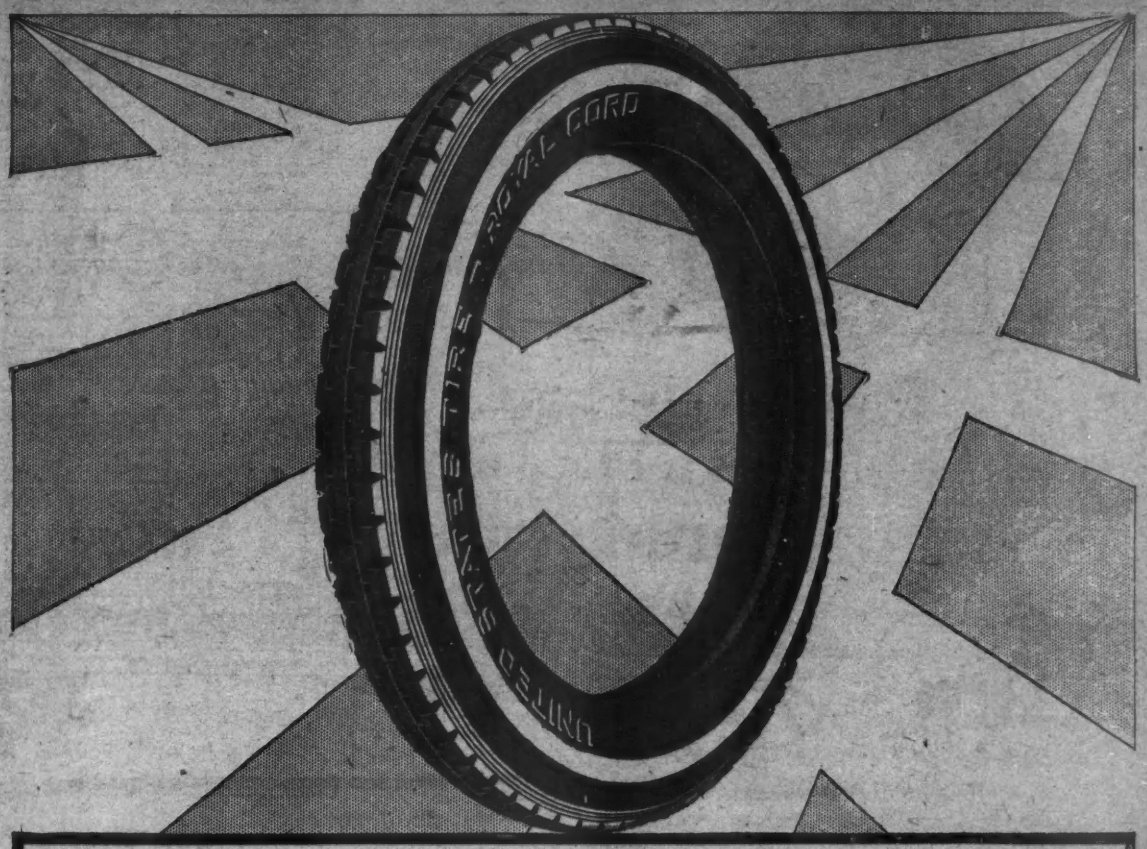
Besides the aforesaid, Mr. Chevalley has put about fourteen acres into strawberries, mostly Magoons, the variety best suited to this valley, and these are due to bear this year. He lays great stress on the vast importance of bees in an orchard; so necessary does he consider them to the fertilization and also to the better perfection of the fruit that he has installed in his orchard an apiary, now forty-two colonies strong, which is in charge of an expert who takes the honey in return. Mr. Chevalley wants only the work of the bees. Government authorities say that the bees will increase the yield of the small fruit 25 per cent, and of the pears 20 per cent.

A Loganberry Enthusiast.

Such faith has this grower in the future importance of the loganberry both as a fruit and as a wine—which he says will in time equal the finest grape juice that ever came out of Bordeaux—that although he already has some fifteen acres in logans (about 60,000 tips) he intends to increase this number still further. He has discovered that the usual method of planting logan tips, i. e., placing the tips horizontally in the ground and covering them lightly, leaves them too much to the mercy of heavy frosts, so he plants his vertically in the ground to a depth of 5 or 6 inches and finds this by far the best method. He holds that the best time for planting them is the last week in August or the first week in September.

It is Mr. Chevalley's intention to dispose of the bulk of his fruit on the prairies where the prices are best and the markets most certain. He is one of the directors of the Fruit Growers' Association in Chilliwack, being very strongly in favor of co-operation whenever and wherever possible, believing that if properly worked it would increase the prosperity of the country and individual a hundred-fold.

Mr. Chevalley is one of those immigrants whose knowledge, wide experience and progressive policy are so invaluable to the development of the Province, and we heartily wish him all the success for which he has so honestly striven.



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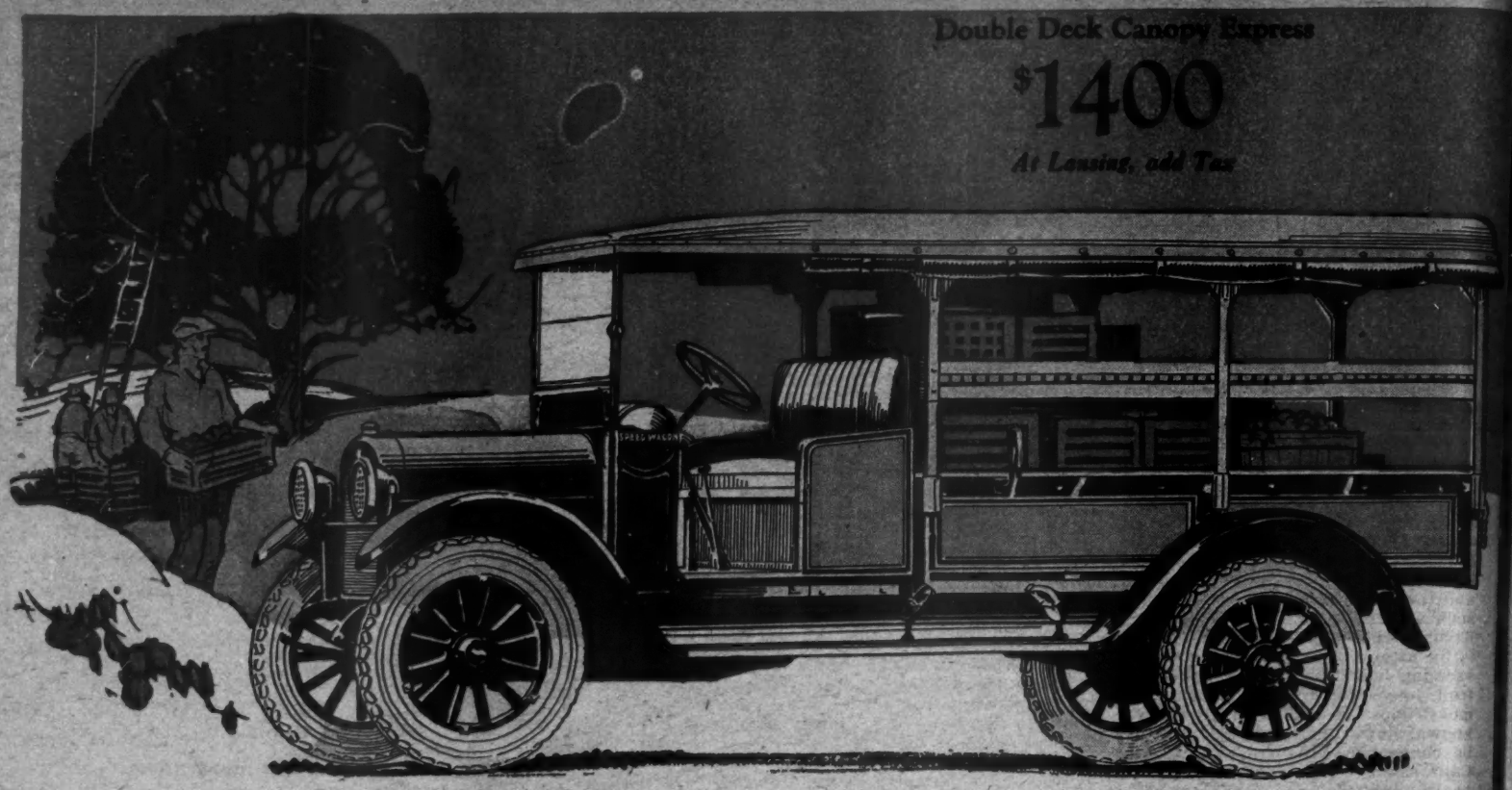


SPEED WAGON

REO

The Fruit Grower's Rapid Transit System

FRUIT may spoil when transportation hesitates. Fleetness and get-there sureness are vitally necessary factors in the vehicle when any kind of perishable produce is the load.

Pneumatic tires and proper balance give the Speed Wagon traction for the plowed fields.

The famous Speed Wagon engine and spiral bevel gear axle give it fleetness which brings the market or cannery closer to home. Long springs and cord tires keep road shocks from the easily-spoiled load.

Certainty of performance, and endurance qualities for a quarter-million (or more) miles of service are built in, because of:

— Inner frame anchoring of power units

— Thirteen-plate clutch

— Amidship mounted transmission

— Super-powerful brakes

— Vital parts 50% oversize.

The sum total is ECONOMY. On the basis of *lasting* economy, *the Speed Wagon is the lowest priced commercial car in the world!*

Designed and manufactured in the big Reo shops,—not assembled!
Chassis $1185 at Lansing, plus tax. Capacity 500 to 2500 pounds.

REO MOTOR CAR COMPANY, Lansing, Mich.

Real Fruit Drinks

(Continued from page 4.)

oped by Prof. C. I. Lewis at Oregon Agricultural College about 10 years ago.

Raspberry and blackberry syrups are made in the same manner as loganberry syrup. Strawberries do not possess enough color of their own and we find it desirable to blend with the strawberries about one-third of their weight of blackberries. The blend possesses a strong strawberry flavor and a rich red color.

Citrus fruits are readily made into syrups by the following process: Oranges and lemons are crushed whole without peeling and are pressed. Sugar is added to the juice to increase the sugar content to approximately 66 deg. Balling—that is, 66 per cent sugar. This corresponds, roughly, to approximately 13 lbs. of sugar per gallon of juice. We find a very pleasing combination to be 1 gals. of lemon syrup to 3 gals. of orange syrup.

We have found that apple juice should not be sweetened with sugar and that it should be concentrated in such a manner that the fresh apple flavor is retained. The orthodox plan is by means of boiling the juice in a vacuum, but this process applied to fruit juices for drinking purposes removes most of the flavor. It is well known, however, that fruit juices can be concentrated by freezing, in fact, Californians hear of this process being applied in Maine and other Eastern states to the concentration of hard cider, but the writer has never been able to confirm these vague rumors. As applied to apple juice, the freezing process consists in freezing the juice at a temperature of approximately 15 deg. F. to a mixture of ice crystals and syrup. The ice is separated from the syrup by means of a sugar centrifuge or by simply allowing the mass to drain. In our laboratory the juice is frozen in 5-gal. glass bottles. The bottles are removed from the freezing room and are inverted and allowed to drain for seven or eight hours. The syrup flows from the bottle and the ice remains in the bottle. The syrup is very rich in apple flavor and is from 40-45 deg. Balling.

We have applied the same process to grape juice, with very good success. Red grape syrup can be made by the vacuum process for the reason that the red wine grapes of California do not possess a distinctive flavor and the principal use of the red syrup is for the purpose of coloring highly flavored white grape syrup or strawberry syrup. To prepare the red grape syrup the grapes are crushed, heated to 160 deg. F., pressed, the juice filtered and then concentrated in a vacuum pan under a very high vacuum of at least 28 in. to a sugar content of approximately 60 per cent. This syrup has a very attractive purplish red color and pleasing berry-like flavor. We find that a very pleasing syrup for bottling purposes can be made by blending equal volumes of red grape syrup prepared in this manner with Muscat syrup prepared by freezing.

All of these syrups can be preserved by freezing storage or by pasteurization in bottles, as described above for loganberry syrup. The syrups can be dispensed to bottlers of soda water, who can use the syrups in exactly the same manner as they now use the artificial syrups.

Making the Bottled Beverage.

The University of California has installed a small soda water bottling plant for the semi-commercial production of carbonated fruit beverages. In using the syrups we measure, by means of an automatic measuring device, into the soda water bottles approximately one and one-half ounces of fruit syrup. We then fill the bottles with carbonated water. We have found distilled water best for the purpose and carbonated to approximately 40 lbs. pressure at room temperature. The bottles containing the mixture of syrup and carbonated water are sealed at once with Crown caps. The bottles are then placed in a tank of water and the water is heated to a temperature of 150 deg. F. for 30 min. This heating process is termed "pasteurization" and is for the purpose of killing the busy little yeast germs which would otherwise cause the juice to ferment and burst the bottles.

Trying it on the Public.

During the past year the Fruit Products Laboratory has prepared and sold in Berkeley and vicinity about 5,000 bottles of the beverage. The drinks have retailed at 10 cts. per bottle. Many families in the University city now regularly keep their pantries supplied with the University's carbonated beverages. Mothers who have used these beverages in their homes find that the children are very fond of them and prefer them to any of the artificially colored and flavored beverages, with which our beverages are sold in competition.

At the College of Agriculture at Davis, Cal., a picnic, to which the farmers of the surrounding country are invited, is held each year. During the past two years we have shipped beverages to the picnic and have found in each case that the product was greatly appreciated. At the 1922 picnic 1,000 bottles were sold in a period of about three hours. Several times this amount could have been sold, had it been available.

A steady demand for the product has been created and our principal difficulty at the present time is to supply this market. The University is attempting to encourage commercial manufacturers to undertake the production of the fruit drinks and to relieve the University of much of its commercial work.

Cost of the Beverages.

In the two tables presented herewith will be found a summary of the cost of the syrup and of the beverages. Examination of the cost of the fruit will indicate that we paid high prices for our berries. It would seem reasonable to expect that it should be possible to retail the beverages for not to exceed 10 cts. per bottle. Our experiments have proven that the public is interested in the pure drinks and is willing to pay 10 cts. per bottle.

COST OF FRUIT SYRUPS.*

Fruit.	Cost of One Ton.	Syrup Cost of One Gallon. Fruit.	Sugar.	Power and Labor.	Pasteurizing and Container.	Total
Apple	$ 15.00	$ .50	$ 0	$ .25	$ .20	$1.00
Blackberry	143.00	.56	.34	.15	.20	1.25
Red Grape	50.00	.90	0	.25	.20	1.35
Muscat Grape	50.00	.63	0	.25	.20	1.08
Lemon	26.00	.40	.36	.15	.20	.81
Loganberry	143.00	.70	.30	.15	.20	1.35
Orange	20.00	.10	.36	.15	.20	.81
Pomegranate	20.00	.14	.12	.20	.20	.66
Raspberry	333.00	1.26	.34	.15	.20	1.95
Strawberry	205.00	.84	.36	.15	.20	1.55

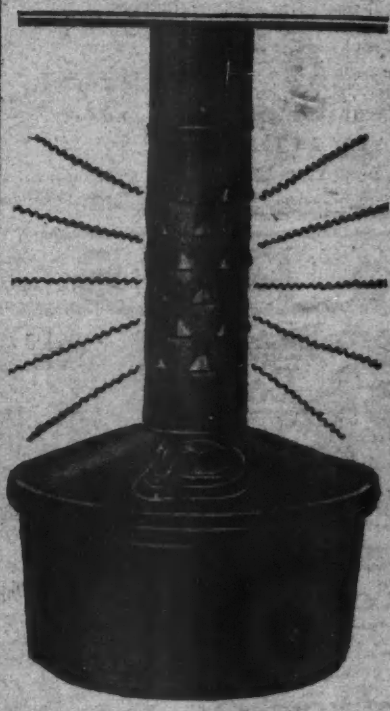
COST OF FRUIT BEVERAGES.*

Kind.	Beverage Cost of One 8-ounce Bottle in Cents. Syrup.	Labor.	Bottle.	Pasteurizing.	Label.	Total with Bottle.	Total Exclusive of Bottle.
Apple	1.25c	.46c	2.5c	.5c	.1c	4.81c	2.31c
Blackberry	1.56	.46	2.5	.5	.1	5.12	2.62
Red Grape	1.69	.46	2.5	.5	.1	5.25	2.75
Muscat Grape	1.35	.46	2.5	.5	.1	4.91	2.41
Lemon	1.01	.46	2.5	.5	.1	4.57	2.07
Loganberry	1.69	.46	2.5	.5	.1	5.25	2.75
Orange	1.01	.46	2.5	.5	.1	4.57	2.07
Pomegranate	.83	.46	2.5	.5	.1	4.39	2.89
Raspberry	2.44	.46	2.5	.5	.1	6.00	3.50
Strawberry	1.94	.46	2.5	.5	.1	5.40	2.90

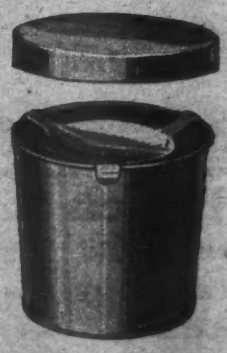
*After Bulletin 359, University of California Experiment Station, May, 1923.

Orchard Heating Saves Crops and Insures Profits

The Fruit Growers Supply Company, Los Angeles, representing 10,000 growers of Sunkist oranges and lemons, has approved the Scheu Smokeless Orchard Heater, made by the American Can Company.



9 gallon oil burning heater—preferred for effectiveness, economy and durability. Also in 7 gallon capacity. Orchards protected with 50 Scheu Heaters per acre saved fruit in the California freeze of 1921—22 when outside temperature was 17° F.



Canco smudge pot. Holds about 10 quarts. Cheap, simple, effective. Orchards equipped with 100 No. 2 Canco smudge pots per acre maintain temperature at 30° F with outside temperature at 24° F.

CALIFORNIA knows this. Florida knows it. Oregon and Washington are sure of it. Other states are beginning to wonder if it isn't true—that orchard heating *does* stop frost damage profitably.

Last March the peach crop in the South was hard hit by frost. Orchard heating would have saved it. For several years apple growers in Virginia and neighboring states have lost most of their fruit. Orchard Heating is the answer. It's cheap insurance.

And it's the early—the most profitable—fruit crops that suffer most from frost—that need Orchard Heating most.

The Heater that has made good

The Scheu Orchard Heater has been tried and tested in every section of the country, under all conditions. The standard of all orchard heaters delivered last year in the United States.

In this heater you find "a combination of essential qualities which experience and use have demonstrated would successfully combat a freeze". The Scheu Heater was officially approved by the "Sunkist" growers after the most extensive field tests by practical orchardists. It has fully lived up to expectations—an effective, economical, efficient device for fighting frost and bringing through your crop. We can refer you to satisfied users everywhere.

Now is the time to plan for the coming danger season. Fill out and mail coupon below. A demonstration does not obligate you in any way.

American Can Company

Orchard Heater Department

Toledo, Ohio Los Angeles, Cal.

SKINNER MACHINERY CO., Dunedin, Fla. Distributors for Virginia, North and South Carolina, Georgia, Alabama and Florida

FOR deciduous orchards protection can be had with No. 2 Canco smudge pots at a cost of $50 per acre. Combination protection can be had with our other style heaters at slightly higher cost.

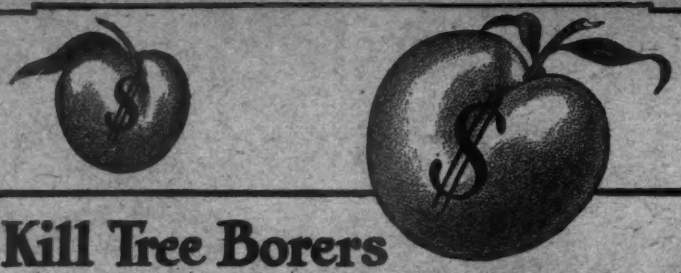
MAIL THIS COUPON

American Can Co.
Toledo, Ohio

I have.....acres
of.....
at.....
and would like a demonstration of your Orchard Heaters. I understand that this does not obligate me in any way.

Signed.....

CANCO



Kill Tree Borers to make big peach profits!

TIME, labor and money have gone into that orchard of which you are so justly proud—and it should return you a handsome profit for years to come. It will not do so if you allow tree borers to sap the vital strength of your trees.

Cutting borers out has never been satisfactory—too costly, too laborious—and slips of the knife often do more damage than the borers.

Niagara PDB (Para Dichloro Benzene) is the proved remedy for these tree and profit killing pests. It kills borers on peach, prune and apricot trees and many growers use it to control pear root aphis.

Be sure to get Niagara PDB (Para Dichloro Benzene) from your dealer. It is pure, unadulterated and full strength. Niagara PDB is inexpensive to use, for one ounce per tree is sufficient to kill borers. It will not harm your trees.

Send for new folder and latest U. S. Government Bulletin on control of tree borers. Both sent free if you give your dealer's name.

It is to your advantage to accept nothing but Niagara P D B (Para Dichloro Benzene).

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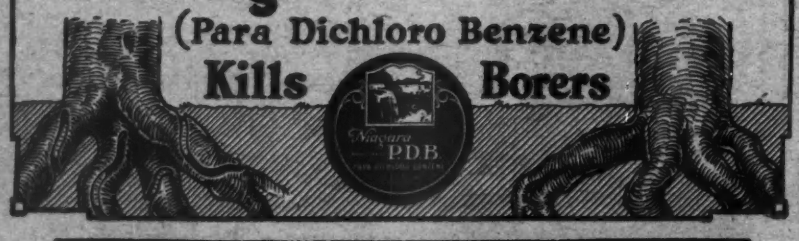
Niagara PDB
(Para Dichloro Benzene)
Kills Borers



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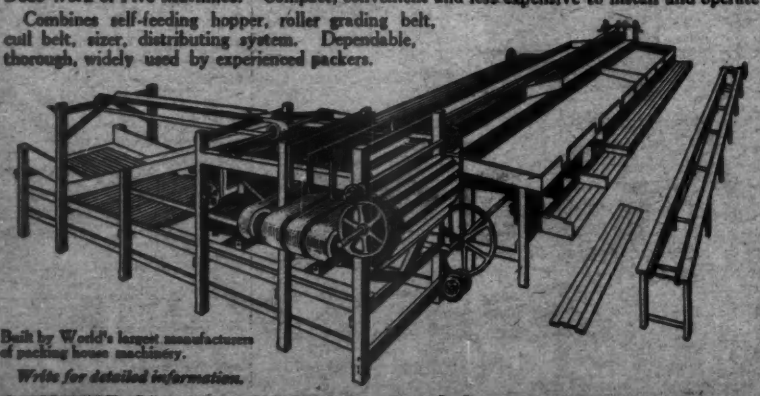

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Orchard Problems and their Solution

by Paul C. Stark
Associate Editor

P. C. Benzine for Peach Borers

I have a 12-acre peach orchard in which some of the trees are showing signs of borer injury. What shall I use on these trees and when should it be applied?—S. E. G., New York.

IF your peach trees are five years or above in age, you can use a substance known as paradichlorobenzine (p. c. benzine or paracide). The treatment is considered to be the most effective borer remedy yet found for peaches. It consists of the application of an ounce of this chemical in a ring around each tree and covering with soil. The ground around the tree is first made level with a spade, removing all rubbish. The chemical is measured out and spread in a narrow ring around the trunk, taking care not to place it nearer than 2 inches to the tree. Soil is then carefully placed in a mound around the tree and packed down. The paradichlorobenzine being a substance which slowly turns into a heavy gas, thus spreads downward around the tree and kills any borers which may be present. The mound of soil is then removed from around the tree early the following spring to prevent injury to the tree. This treatment is not recommended for trees which are less than five years of age because the bark of these young trees is too tender to withstand injury. However, if the greatest care is observed in making the application, and only a half ounce of the chemical is used, satisfactory results may sometimes be obtained. With the younger tree, however, the soil mounds should be removed in two weeks' time instead of the following spring.

The best time for the treatment of peach trees for borers depends largely upon the section of the country in which the orchard is located. In the north the proper time is soon after September 1st. In the latitude of Washington, D. C., it is about September 10th, ranging to September 25th in the Ozark region and as late as October 10th in the south.

Dry Weather Injury

The young orchard which I set last spring has been doing fine until just recently when on a few of the trees, the leaves are turning yellow and falling off. The weather has been dry and hot for the last two weeks and the soil is very dry. Will these trees be all right next spring?—J. W. P., Kansas.

WITHOUT a doubt your trees are suffering from the effects of dry weather and possibly lack of cultivation. A young orchard requires plenty of cultivation during its first summer in order to conserve moisture for the roots which lie rather close to the surface. The planting of a cover crop may be delayed until late August or September, in the case of young trees, for this reason. It would be a good plan to inspect all of your trees for borers, as these insects sometimes cause young trees to turn yellow and lose their leaves prematurely. All trees which are weakened by early leaf-fall should receive generous application of nitrate of soda or manure next spring to bring them back to their normal, vigorous condition.

Last Grape Spray

What spray can I use in place of Bordeaux Mixture on my grapes just before ripening in order that the fruit will not be stained? I have heard that copper sulphate alone can be used for this purpose.—G. A. C., Ohio.

BORDEAUX Mixture is often omitted as a late spray for grapes because of the fact that it stains the ripening fruit. Copper sulphate is sometimes used in its place, but because of its tendency to burn the grape foliage it is not altogether safe. A much better spray for this purpose is one known as Ammoniacal Copper Carbonate and made by the following formula:

Copper Carbonate	5 ounces
Ammonia	3 pints
Water	50 gallons

The ammonia is diluted with 20 gallons of water, and to this is added the copper carbonate which has previously been made into a paste. The mixture is then stirred until the carbonate is dissolved and then diluted up to 50 gallons. This spray should be applied soon after making as it loses its strength upon standing.

When To Apply Fertilizer

The land on which my three-year-old orchard is planted is somewhat weak and in need of fertilizers. Would you advise the application of a commercial fertilizer this fall? I can obtain a 8-2-2 mixture or straight nitrate of soda.—O. K. B., New York.

FRUIT trees should never be fertilized in the fall unless done late enough to have no effect upon their growth or maturity. The ideal time for fertilizer application is in the spring before growth begins. It is at this time that the trees need their greatest stimulation and also the time that the available plant food in the soil is present in the least amount.

According to the great majority of fertilizer experiments, it has been found that young fruit trees are very little benefited by any kind of fertilizer except those containing nitrogen. For this reason it would not be a good plan to use a mixed commercial fertilizer. The results secured from nitrate of soda alone will more than justify the cost and on weak soils its use can hardly be profitably spared! Manure or leguminous cover crops turned under also supply nitrogen and humus.

Late Sown Cover Crops

How late in the season can I sow a cover crop in my young apple orchard and still get plenty of growth for winter protection? My orchard has been intercropped with corn which I intend to cut for silage. What kind of cover crop would you advise for late planting?—C. D. S., Indiana.

AS a general rule a cover crop is sown in the orchard as soon as cultivation ceases in mid-summer. When a crop is already on the soil, however, the sowing of the cover crop must wait until this field crop is removed. In some cases there are plenty of weeds on the land and this does very well as a cover without sowing anything else. On the other hand if the soil is rather bare and particularly if the slope is such that will favor washing, something should be planted as soon as possible in order to take advantage of the fall rains for its growth.

Rye and vetch make a good combination cover crop for late planting in late August, September or even October in many sections. In my orchard I have found September 10th to 20th gives best results. If it is not particularly desirable to have a crop which will live through the winter and start growing in the spring, oats will serve the purpose well. Some of the clovers—such as sweet clover—may be also planted in late summer or early fall as they will make a fair start and will make a good growth the following spring. The chief thing of importance is that the ground be covered as soon as possible by some plant growth which will prevent washing and will hold more or less snow during the winter.

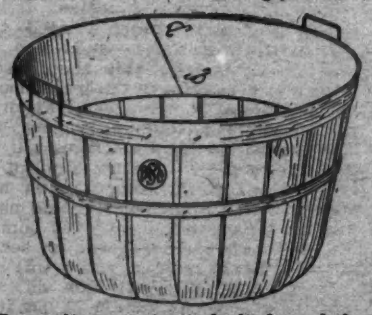
Extra Width Corrugated Pads for Bushel Baskets

by C. L. Burkholder

AN objection often raised to the use of bushel baskets as cold storage packages for apples is the tendency for the lid to rim cut some of the fruits in the outer ring of the top layer. A special pad is now offered for sale which covers the entire top of the basket and rests on the upper rim of the basket instead of on the fruit. It is cut to slip in between the handles.

A basket of apples attractively faced by means of the shaker. Note protecting pad which rests on the edge of the basket.

Many car lot buyers of peaches and apples are now specifying that these covers should be used. They claim the baskets show a more attractive face layer when exhibited to their customers. It is exceedingly difficult



Paper liner protects fruit from being cut and bruised by the top hoop of the basket, projecting staples or wire handles.

to pack a car of fruit in bushel baskets tight enough to prevent all movement of the baskets in transit and this extra width pad fitting over the entire top instead of slipping in the top of the basket naturally gives greater protection to the fruit

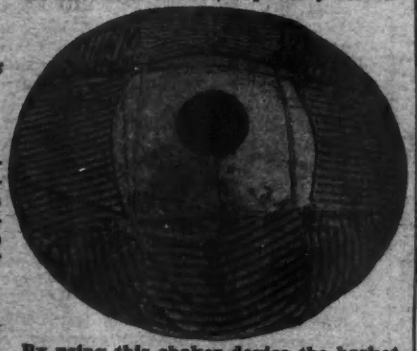
Bushel Basket Liners

When apples are placed in storage in bushel baskets it often happens that some of the nails were not properly clinched by the nailing machine and these points puncture a few of the apples in each basket. These fruits soon start to rot and often cause decay throughout the package. This can be avoided by using a paper liner which circles the inside of the basket over the ring of nails half way between the top and bottom of the basket. It is seldom feasible to repack apples which have been in storage and any precautions which will help to keep the package in good condition are worth considering.

Lid Clamps.

Clamping down the sides of bushel basket lids helps keep the whole package rigid and allows less movement of fruit within the package. A number of different styles of clamps are offered for sale. One style hooks under the top hoop of the basket and over the lid which is drawn down into place by clamping the clip in the center with wire pliers. Another type consists of a sheet of heavy tin to which is attached two lengths of wire. The bottom of the tin sheet slips up under the top hoop of the basket and is then bent up and over against the basket. The two wires are brought up on each side of a slat of the cover and given a few twists with a pliers to bring the lid down to place.

Some sort of fastenings are almost a necessity on express shipments and some growers merely poke a piece of bailing wire through the side of the basket and bring it up around the edge of the lid and give it a few twists. The four handle basket makes an excellent basket, especially for ex-

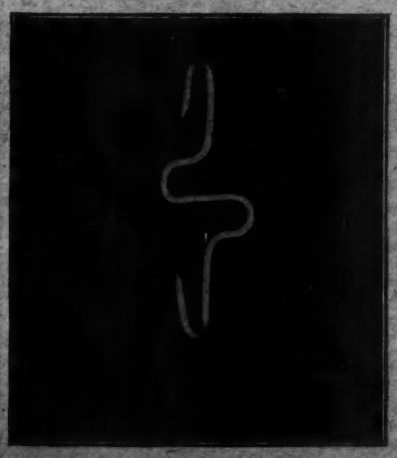


By using this shaker device the basket of fruit is made ready for the face layer in a few seconds.

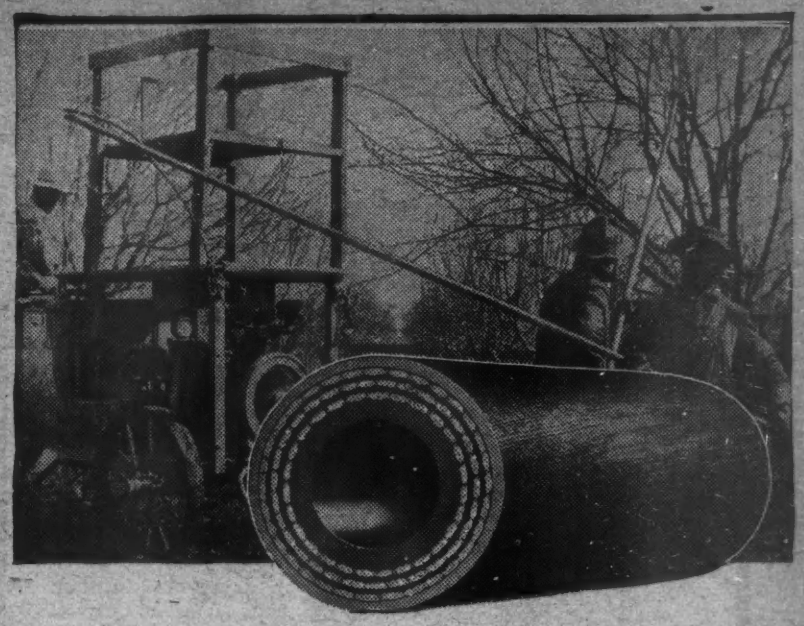
press shipments. The extra handles with the cross slat bind the cover in place better than can be done with any kind of lid clamp.

A Bushel Basket Leveler.

It has always been difficult to face off the top layer of fruit in a bushel basket unless it has been ring packed from the bottom. Last season a good many growers used a basket leveler which has recently been put on the market. This leveler is on the order of the well known "tailer" for apple barrels except that it is cone shaped and made of metal covered with cloth. When the basket is nearly full of fruit the leveler is placed on the surface of the fruit and the basket rocked sharply a few times. The last layer of fruit is then placed by hand and has a nice bulge which is both attractive and a help in holding all the fruit in the basket tight after the lid is clamped down. The outside ring of fruit on this face layer is sometimes wrapped with an attractive wrapper advertising the orchard. This works out well especially with pears and apples. It puts a finish to the pack and attracts the attention of the best buyers.



A very satisfactory lid clamp.



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Mail the coupon, get a sample, and see for yourself what strength and quality we have built into it.

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No hemming and hawing—no letters of excuse. The goods are sold and you get your money!

This system of prompt payment (an unbreakable rule with us) is one of the advantages of selling your fruits through us.

Another advantage is that you get the highest market prices, as our sales are attended by a daily average audience of 300 buyers, bidding in competition. The prices we receive are frequently far above market prices!

Don't put up with delayed remittances. Many of the largest growers are among our customers. Their experience should be a pretty safe guide for you.

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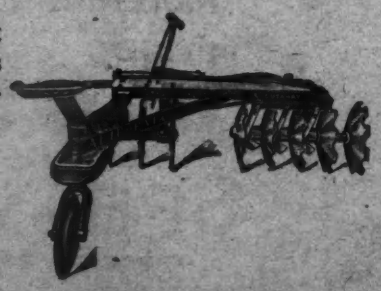

THE CUTAWAY HARROW CO.

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MARKETS AND MARKETING

APPLE growers are naturally interested to know if there is any activity in the apple market at this time for late fall and winter varieties. From all indications we can say that there is practically none. The International Apple Shippers recently held the largest attended conference in their history in Detroit. There was much enthusiasm and good feeling but reports are that very little tonnage changed hands. Buyers are feeling that since the crop is some 17 per cent larger than a year ago prices will have to open rather low in order to move the tonnage. Growers, on the other hand, feel that the unusually good quality this year is worthy of some consideration. There are reports of a few sales of western Jonathans at about $1.40 a box f. o. b. Summer apples in the middle of August were ranging rather low in price, 50 cents for the poorer grades up to about $1.75 for the better grades. Western boxed Gravensteins have been selling around $1.90 to $? a box on eastern markets.

IT is hard to give Bartlett pear quotations in a monthly magazine. The early shipments up to the middle of July were bringing very good money, about $4.50. Owing to the fact, however, that an unusually large tonnage of small green pears from the coast were offered to the trade, the price broke, the average being around $2.35. The market strengthened, however, and about the middle of August Bartletts were ranging from $2 to $4.10 on the eastern markets according to quality and grade.

THE growers of soft canning fruits in California are having a rather disappointing year. The crops of pears, peaches and apricots in the aggregate are unusually large, cannerymen have not been in the best financial condition and bankers have refused to finance beyond a certain point, with the result that prices have ranged low. The same condition has also extended throughout the Pacific Northwest.

As a result of this condition, undoubtedly within a relatively short time the growers of soft canning fruits in California and the Pacific Northwest will realize that they will have to organize on a different basis than heretofore if the heavy crops of the future are to be handled to advantage to the growers. Ways can be worked out whereby the tonnage can be handled at a profit to the growers.

The California Pear Ass'n finally slashed its prices $15 a ton, naming $35 a ton for No. 1 and $25 a ton for No. 2 Bartletts. The California Canning Peach Growers also reduced their prices $15 a ton on the best grades of Clings and $10 a ton on the best grades of Freestones. The Clings were reduced from $45 to $30 a ton and the Freestones from $35 to $25 a ton.

THE sour cherry movement in the east this year, especially in New York, has been an interesting one. Early in the season canneries quoted futures at a price which would mean only 5 cents to the growers. Weather conditions followed which resulted in only a half a crop, and the price advanced to 6 cents to the growers with a few sales as high as 7 cents. Some buyers cancelled their early orders at the low prices and are still reluctant to buy freely. The result ultimately will mean a higher price for canned sour cherries.

THE Hood River Apple Growers' Ass'n has adopted a unique way of marketing its apples in New York and Boston this coming season. The fruit is being placed in the hands of a New York agent who will sell in New York and Boston only through the auction channels, in the same way that the California Fruit Exchange handles its oranges. This will be watched with much interest by apple growers all over the United States.

WALNUT growers will be interested to learn that the French crop this year is relatively small but that the quality is expected to be unusually good. There has been some carry over which will probably be largely disposed of through cracked nut channels.

THERE has not been much activity in dried fruits the past month with the exception of raisins. The reduction in price of the carry over of raisins by the Sun-Maid Raisin Growers has been well received by the trade and a huge tonnage is moving through the customary channels. Eastern buyers feel more kindly towards the association than at any time in its history.

THE Federated Fruit & Vegetable Growers have just pulled off the largest deal in their history, as it has just been announced that the Mutual Orange Distributors of California are affiliating with the Federated. The Mutual is the second largest non-profit co-operative citrus organization in California and it insures the Federated a heavy tonnage of California's finest citrus fruits.

Crop Report

FIGURES are not materially different than they were a month ago except that there has been somewhat of an increase in government apple estimates, the crop now being estimated at 33,680,000 barrels, which is an increase of about 1,000,000 barrels over the earlier estimates. Careful detailed figures gathered from Pennsylvania, Maryland, Virginia and West Virginia show the following apple crop of those states this year:

	Barrels
Pennsylvania	1,250,000
Maryland	590,000
Virginia	1,700,000
West Virginia	1,250,000

The latest government figures on pears are for 15,224,000 bushels.

The final government estimates on peaches called for 48,358,000 bushels against 56,705,000 bushels last year.

We have already reported on the large walnut crop on the Pacific Coast. The pecan growers of the South are also going to harvest a very heavy crop, the estimate now being 83½ per cent of normal, compared with 56 per cent in 1921 and 53 per cent in 1922.

There is a rather large fruit and nut crop in the country as a whole this year. The figures prepared by the government show that nearly all crops running above normal are as follows:

Apricots	149.6
Plums	131.1
Oranges	122.0
Grapefruit	117.0
Apples	111.3
Almonds	109.2
Peaches	107.9
Lemons	107.9
Walnuts	105.2
Grapes	102.2
Figs	102.2
Pears	102.7
Olives	101.4
Blackberries	100.0

THE Imperial Valley, Calif., planted 1,000 acres of grapefruit in 1922.

Hills of Apples

(Continued from page 3.)

they deliver their fruit to the city market and the five and ten cent stores, the latter taking almost their total supply of apples. The remainder of the apples, most of the peaches and berries are sold to customers who phone in their orders to Mrs. Varien and drive out to the Varien orchards in the evening, the Variens being too busy during the day to wait on the customers.

And once a Varien customer, always a Varien customer in this part of the county, for every apple in every bushel is perfect, every peach flawless; there is not a wormy cherry and the berries are the largest and most uniform to be found, for the Varien Brothers take an immense pride in the quality of their fruit.

The two boys, men now, do all the work of the orchard farm with the help of one hired man the last two years and the pickers at harvest time. "And it takes work," said Robert Varien. "Every day of the year that there isn't a blizzard or an all-day downpour (and on those days we study catalogues and books on orcharding) we can be found in the orchards from six to six. But it's work we like even if it isn't a white-collar job."

"Then you think it has been worth while?" I queried.

We were standing at the foot of one of the hills, an orchard path rising above us into the setting sun which turned the pendant Grimes to balls of purest gold and burnished the ripening Ganos to a glowing crimson. Robert Varien looked up unto his hills of apples and slowly down to the knoll where his clap-board house stood and where two sturdy Varien children and three pretty collie pups romped in the yard. "Yes, it's been worth while! All the work and worry over the mortgage, the laughs people had on us while we waited for our trees to mature; but if we could have seen ahead to all we had to contend with, I doubt if we'd ever started, I doubt if we'd had the courage. But I'm sure glad we couldn't see ahead too much or maybe we wouldn't have realized our ambition and seen one of our dreams come through at 25."

Planting Apple Trees

I am planning a new apple orchard this spring. Will you give me a few directions in regard to depth of planting, and also how to prune the tree following planting? Would it be a good thing to use dynamite in digging the holes?—R. A. L., Indiana.

IN planting a fruit tree you should dig the hole plenty large enough to accommodate the roots. Root pruning is of little importance since enough root surface has already been removed in digging the trees from the nursery row. Any long roots may be shortened and rough ends pruned back, but otherwise no pruning is required. The tree is placed in the hole about an inch deeper than it grew in the nursery and slightly leaned in the direction of the prevailing wind.

The most important thing in planting a tree is to pack the soil firmly around the roots. This should be tamped down very hard, putting the top soil next to the roots and the other soil on top. One should be unable to pull up a young tree when it is properly planted.

It is not necessary to use dynamite in digging holes to set trees in most soils. Never dynamite when soil is wet.

MADE TO LAST A LONG TIME

Copyright 1923, by The Goodyear Tire & Rubber Co., Inc.

Goodyear Spray Hose lasts a long, long time because it is specially designed and built to withstand the wear and strain to which hose is subjected in spraying service.

The strong, biting solutions flow through a tube that is scientifically compounded by Goodyear chemists to resist deteriorating action. This tube is contained in a stout body that easily and safely carries the high pressure required to vaporize the solutions at the nozzle. Around this remarkably rugged and efficient body is a tough cover to protect the hose against abrasion.

Season after season Goodyear Spray Hose saves the replacement cost of less durable hose. It saves labor and time, too, for it is light and easy to handle, enabling the user to do faster and more thorough work.

Get Goodyear Spray Hose when you are overhauling your equipment. See that any new apparatus you buy is Goodyear equipped. If your dealer hasn't Goodyear Spray Hose in stock, write to Goodyear, Akron, Ohio, or Los Angeles, California.

GOODYEAR

SPRAY HOSE

The New Overland

Touring $525 f.o.b. Toledo

All-Steel Body with Baked Enamel Finish

Tough steel of ample thickness to withstand hard usage around the farm. Enamel, baked on—literally fused into the steel body at a temperature of 450° F.—a process that is possible only with an all-steel body—guaranteeing permanence to the lustrous finish of the Overland touring car.

Triplex springs (Patented) which give great riding ease, an immensely strong rear axle, a powerful, dependable engine that returns 20 miles and more to the gallon of gasoline—

These are *added* values which combine to make owners call the Overland "the most automobile in the world for the money."

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Roadster $525, Red Bird $750, Coupe $795, Sedan $860; f. o. b. Toledo. We reserve the right to change prices and specifications without notice.

Give Your Young Trees Every Chance

INSURE their getting proper nourishment by blasting with Dumorite preparatory to digging. A half-cartridge of this new du Pont explosive is usually sufficient to shatter the subsoil, allowing the roots to penetrate easily and putting great stores of plant food within easy reach.

Dumorite shoots stick for stick with 40% dynamite but gives you ⅓ more sticks per dollar. Buy it from your local dealer.

Write today for your free copy of the 110-page "Farmers' Handbook of Explosives." It gives the latest methods of tree-planting, land-clearing and ditching.

E. I. du Pont de Nemours & Co., Inc.

Explosives Department *Wilmington, Delaware*

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Du Pont Products Exhibit Atlantic City, N. J.

⅓ more per dollar

Blast your tree-holes with

NON-HEADACHE DU PONT NON-FREEZING

DUMORITE

WITH THE CO-OPS.

THE third annual meeting of the Western New York Fruit Growers' Co-operative Packing Ass'n, was recently held at Rochester. Much enthusiasm was shown at the meeting and the following members were elected to the board of representatives: Albion, Wm. A. Carr; Central Orleans, Chas. Trolley, Jr.; Johnson's Creek, Ray Lewis; Leroy, C. A. Rogers; Lyndonville, J. R. Andrews; Parma, M. C. Burritt; Wolcott, H. P. Shaer, and Wyoming, Wm. Falkner.

The association is a big factor in the marketing of western New York fruit, now handling some 3,300 cars of fruit. The sales last year totalled $1,800,000. After deducting freight, icing, demurrage, storage, etc., $1,360,000 net sales were retained in the Central's office.

The association is growing continually and is doing a great work in western New York in standardizing the pack and in obtaining much wider distribution of New York apples than has been true heretofore.

WILLIE M. GIFFIN, who has been associated with the Sun-Maid Raisin Growers for ten years, is severing his connection as president of the association and a member of the board of directors to take effect on November 1st. Mr. Giffin feels that he must give attention to his personal affairs. He also feels that possibly it is for the best good of the association that he should sever his connection with it.

The determination of Mr. Giffin to sever his connection with the Sun-Maid Raisin Growers will be received with regret by friends in the co-operative movement all over the United States. His resignation, however, shows how really big the man truly is, that he is willing to sacrifice himself personally that the co-operative movement, with which he has been connected and which owes its great growth to him more than to any other person, might not be hampered in any way. By his action he shows that he is a true friend of the Sun-Maid growers and of the co-operative movement. It is to be regretted that many of the men who do the constructive hard work of co-operative movements have to be sacrificed in later years.

A. M. MORTENSEN has been appointed general manager of the California Prune & Apricot Growers' Ass'n to succeed H. C. Coykendall. The association is to be congratulated on being able to secure a man of Mr. Mortensen's wide experience. In 1902 he joined the Armour Carlines and was assistant manager in 1906 when this service was absorbed by the Pacific Fruit Express. In 1910 he entered the employ of the California Fruit Growers' Exchange as traffic manager and in 1913 he became traffic manager of the Pacific International Exposition. In 1916 he became general manager of the Fruit Growers' Supply Co. and in 1919 general manager of the lumber department of the California Fruit Exchange at Sacramento. In 1922 he became vice-president and general manager of the California Pine Box Distributors. It is thus seen that Mr. Mortensen has had experience which should prove invaluable to him in his new position.

ORANGE growers of southern Texas are forming a Citrus Growers' Exchange. It is expected that the coming citrus crop from this section will range between 700 and 800 cars. The Exchange will establish new packing plants, standardize grading and packing and will work out a plan for financing the moving and handling of the crop.

CALIFORNIA Almond Growers' Exchange is to enter the shelled almond market on an extensive scale this coming season. While the association has been handling some shelled almonds for a number of years, they are now planning to become a large factor in this trade and are at present soliciting orders from buyers throughout the United States.

THE walnut acreage of California is now 100,000 acres, with an increase of 6,000 acres annually. This state is now producing half the walnuts that are grown in the world. The California Walnut Growers' Ass'n handles the major part of the tonnage and the showing of that organization in the past few years is remarkable. Of the consumer's dollar the past year, the walnut grower received 55.6; the retailer, 26.3; the wholesaler, 7.3; freight, 4.8; marketing, 3.3, and packing 2.7. This is a remarkable record as the producer on an average receives only 37 per cent of the consumer's dollar. The fine results are due to efficient handling by the association, its up-to-date merchandising, wide distribution and unique advertising.

Subscribe for The American Fruit Grower Magazine.

HETZEL'S ELASTIC TREE CEMENT

Used for SEALING, GRAFTING, PRUNING AND BUDDING TREES

NON-POISONOUS, NON-PENETRATING HAS NO EQUAL

Made in Red, Black, Brown and Gray Colors

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Direct from grower at lower prices. Apple and Peach trees. Asparagus and Berry Plants. Privet and Barberry hedging. Guaranteed. Write for new price list.

WESTMINSTER NURSERY Dock 71. Westminster, Md

AUTOMATIC FROST PROTECTION

Our new Vlag Automatic Grove Heater has made frost protection an absolute certainty. No more refilling or cleaning. No more large storage tanks; no more wagons and no oil slopped around in the grove. WE CAN RAISE TEN DEGREES IN THIRTY MINUTES. For heat efficiency and durability it costs less.

Big Money for Agents

We want good, live, reliable agents. Men who will not exaggerate or misrepresent to make a sale. The truth is good enough. We can prove through various banks that some agents have made $10,000 per year.

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PARK AVENUE HOTEL

4th Avenue from 32nd to 33rd Streets NEW YORK

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One of the best known hotels in the metropolis. Convenient to shopping, theatres and in the heart of the wholesale district.

Rooms from $2.50 per day upwards.

POPULAR PRICE CAFETERIA and REGULAR RESTAURANT

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"DETROIT" Wire Hook BELT LACING OUTFIT Post Paid $5

By far the best way to lace farm and thresher belts. Same method used by 10,000 big factories and many more small shops and farms everywhere. Saves time, belts and money. Each hook has over 100 lbs. pulling strength. Tool for applying lacing, $3.50, or together with assorted box of lacing as shown—complete outfit postpaid $5. Saves belts perfectly for ⅛ an inch. Money back if not satisfied. Write for literature.

"DETROIT" BELT LACING

Utah Apple Grower

(Continued from page 6.)

of firewood. He spends from $1,200 to $1,500 for spray material each season and the writer affirms that he has never seen a cleaner orchard, absolutely free from fungus or insect infestation. He has offered his County Agent $5 for every wormy apple he shall find in his orchard. Said County Agent reports that he has not been able, through diligent search and inspection, to win a single V yet.

The finest Rhode Island Greening apple the writer has ever seen east or west Mr. Spencer brought out of common storage in the middle of April. These apples had their normal flavor and color and were not mealy, although it was long after the season that they are considered at their best. We were equally surprised to see some Jonathan and Winter Banana almost as good as when consumed in their normal season.

Provo District Ideal.

This most successful apple grower affirms that here, in the Provo district, at the very foot of Mt. Timpanogas—Utah's grandest mountain—in sight of that scenic gem of the Wasatch Range—Utah Lake—is a soil and climatic condition that puts the color in the apple and gives it a most desirable flavor and size. He declares that the Rome Beauty, Jonathan, Winter Banana, Winesap and Gano apples can be here produced commercially with profit and of a quality unsurpassed.

Years ago, before his neighbors "unloaded" their orchards upon him, when he had more time, Mr. Spencer went to district, state and national fruit expositions with his apples and never failed to bring back prize ribbons. In the State Fairs of 1910 and 1911 Mr. Spencer won silver cups for the best car of packed apples in all Utah. He never failed to win the prize pack of boxed apples when he went after it.

When Chief Justice Taft was President of the United States he was one year the guest of the Utah State Fair management. He especially commented on that prize pack of Jonathans that Frank Spencer had on exhibition. When the President's train went out of Salt Lake it had this box of choice Jonathans aboard. The following letter came back to the grower, which he very greatly prizes:

Enroute to Boise, Idaho,
October 6, 1911.

Frank Spencer, Jr.,
Provo, Utah.

My dear Mr. Spencer: The President requests me to thank you gratefully for your courtesy in presenting him with the delicious fruit in Salt Lake yesterday. He has never eaten apples that had a better flavor and has never seen apples that had a better color. He enjoyed his visit to the Utah State Fair immensely.

Sincerely yours,
(Signed) CHAS. D. HILLIS,
Secretary to the President.

Utilizes By-Products on the Farm.

Mr. Spencer has but two grades of apples for the market, Extra Fancy and Fancy. They are all that the name implies. His lower grades are used for cider and cider vinegar. He has a large cider tank and has recently installed a 5 hp. electric motor to furnish power for grinding the apples and to be "the general errand boy" for this orchard farm. Some pure bred Duroc hogs and a fine flock of good laying hens see that nothing in the apple line goes to waste. Some choice dairy cows help turn in a revenue on this Utah County fruit farm.

Conclusion.

This careful orchard grower, like all American farmers, suffered hardship and financial losses during the reconstruction days following the World War. He is a born optimist and with hope and courage he plans for the future. His work already done demonstrates beyond the question of a doubt that the Provo district is just as good an apple section as it is a peach, cherry and bush fruit and truck crop region.

This district won the big State Trophy prize at last year's State Fair at Salt Lake for the best all-around county display of crops, field and orchard.

A good number of apple growers of Frank Spencer's caliber will certainly put Provo on the commercial apple map of not alone the Intermountain Region but of the Whole Nation. Good soil, good climatic environment, with a real apple grower who uses brain as well as brawn, makes a combination that is certain of final and permanent crop success.

Comfort For the Driver

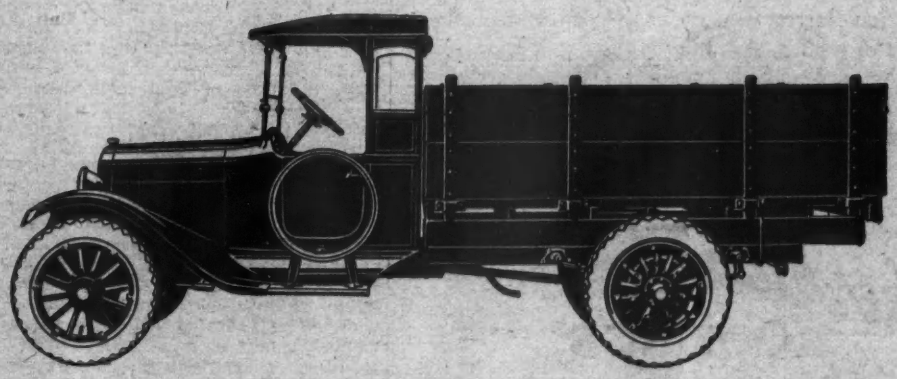
Owners usually get their best results from the trucks that stand highest in the estimation of their drivers.

And the trucks that stand highest are those that ride and steer like passenger cars. Instead of adding to the driver's fatigue, they afford a pleasant relaxation from the work of loading and delivering.

Because these qualities are so pronounced in Graham Brothers Truck, drivers all over the world are becoming its most enthusiastic boosters. And owners are reducing costs and improving service at a pace far beyond their greatest expectations.

1 Ton Chassis, $1265; 1½ Ton, $1525; f. o. b. Detroit or Evansville, Ind.

GRAHAM BROTHERS
Detroit — Evansville



GRAHAM BROTHERS TRUCKS

SOLD BY DODGE BROTHERS DEALERS EVERYWHERE

Use Good Labels

EVERY package of high-class fruit which reaches the market should be attractively labeled. In choosing a label, secure good paper with attractive color combinations. Be sure and paste the label on the package in an orderly, systematic and neat way. Many a fine label loses its effectiveness because of the slip-shod method used in applying the label. Avoid cheap, poorly appearing printed labels. They are, we believe, poorer than none.

Nail Securely

THE number of packages of fruit which arrive in a big market like Chicago which are broken is appalling. Much of this breakage is absolutely unnecessary. A great deal of it is due to poor nailing. Nails which are too short or are not of the right type are largely responsible for the condition. Frequently a grower has used too few nails and an extra nail would often obviate great loss. Other than poor nailing, most of the breakage comes from improper bracing of the load in the car.

Young Fruit Trees Need Winter Protection

Every unprotected tree is subject to damage from rabbits, mice, gophers and other rodents. Below the snow line these animals gnaw the young bark and set back the growth for years, or entirely destroy the trees. Excelsior Wire Mesh Fruit Tree Guards will give you complete protection at a cost of a few cents a tree. For complete information address Department A.

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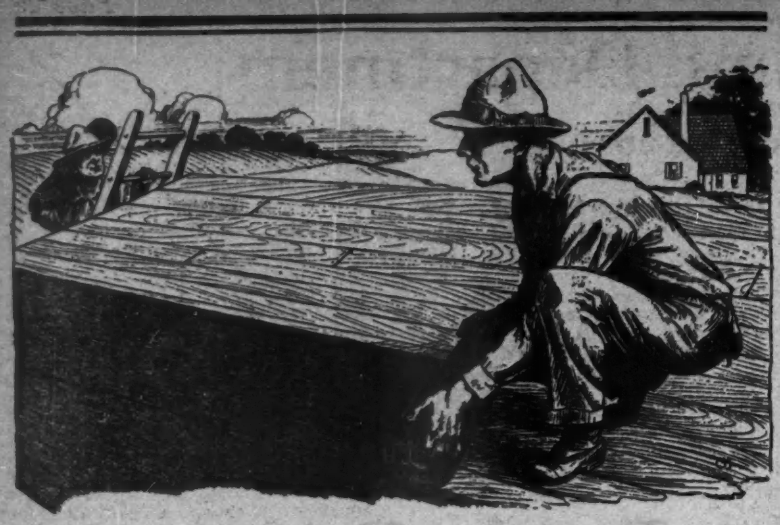

Do It Right and Be Done With It—

What buildings are you going to roof this Fall — your barn, chicken house, implement shed? No matter what the job is, do it right. You know it doesn't pay to lay make-shift roofings. Put down a roof that will give lasting, weathertight protection to your buildings—a roof of Barrett Everlastic Smooth-Surfaced Roll Roofing.

Thousands of American farmers know the lasting strength of this sturdy roofing—have found that it pays to be sure that the Barrett Label is on the roofing they buy. For this label has a definite meaning.

It stands for the more than 70 inspections that Barrett Smooth-Surfaced Roofing must pass before it leaves a Barrett factory. Inspections to make sure that the tough, heavy felt base is free from the tiniest flaw. Inspections by Barrett Chemists to see that the everlasting waterproofing compound with which the felt is impregnated, and then heavily coated, is up to the Barrett standard—constant inspections of every detail of the manufacturing process.

The result is a roofing that you can lay and forget. Fire-resistant, easy and economical to lay; it is giving enduring, weather-tight protection to thousands of farm buildings in all parts of the country.

Pay a visit to the nearest Barrett dealer, a man you can depend on for sound knowledge of roofing. Ask him to show you Barrett Smooth-Surfaced Roofing. Meanwhile, write for the "Barrett Handbook for Home-Owners and the Farmer," a manual of money-saving information about Barrett Products. A post card brings it by return mail.

Barrett ROOFINGS

Your Choice of Six Styles

Everlastic Giant Shingles

These "Giants" for wear and service are handsome enough for the expensive home, economical enough for small farm house or cottage. Their weather side is mineral-surfaced in beautiful shades of red, green, or blue-black. This fadeless mineral surface resists fire and never needs painting. Their base is extra heavy roofing-felt thoroughly waterproofed. Because of this extra-thick, extra-rigid base, these shingles can be laid right over the old roof—a big saving on reroofing jobs. Size 8 x 12¾ inches. Are laid easily and without waste.

Everlastic Single Shingles

Mineral-surfaced in red, green, or blue-black. Base of best grade roofing-felt. These shingles are staunchly weatherproof, fire-resisting and need no painting. Size 8 x 12¾ inches.

Everlastic Smooth-Surfaced Roofing

The most popular of plain-surfaced roll roofings. Made of best grade roofing-felt, thoroughly saturated with high-grade waterproofing material. Under surface is protected by rot-proof sealback. Tough, pliable, elastic, durable, and low in price. Easy to lay. Nails and cement in each roll.

Everlastic Mineral-Surfaced Roofing

A beautiful and enduring roll roofing. Mineral-surfaced in red, green, or blue-black. Has rot-proof seal-back. Nails and cement in each roll. Very popular for bungalows, cottages, garages, and all farm buildings.

Everlastic Multi-Shingles

Four shingles to a strip. Mineral-surfaced in red, green, or blue-black. Two sizes—10 inches and 12¾ inches deep, both 32 inches long. The 12¾-inch Multi-Shingle, laid 4 inches to the weather, gives three-ply roof—the 10-inch gives two-ply roof.

Everlastic Octagonal Strip Shingles

The latest in strip shingles. Mineral-surfaced in red, green, or blue-black. Afford novel designs by interchanging red strip with green, or red strips with blue-black.

Ask your dealer or write us

The Barrett Company

40 Rector Street New York City

THE BARRETT COMPANY, LIMITED, 2021 St. Hubert St., Montreal, Quebec, Canada

Cider Manufacture

(*Continued from page 4.*)

to the size of the mill, from a few tons to 80 tons or more. They represent the most efficient type of mill. They give a minimum yield of at least 4 gallons of high grade cider per bushel and the labor cost of production is reduced to a minimum. A mill of this type will soon pay for itself in the larger yield of cider when compared with the cheaper hand mills. When cider is to be made in any quantity greater than for home use a power mill should be installed.

Use Good Fruit.

There is a common belief in most localities that anything that looks like an apple, or that has at sometime in the past been an apple, is good enough for cider. It is this belief more than any one other thing that has prevented sweet cider from taking the place it deserves as a nutritious, healthful soft drink.

A visit to the average country customs cider mill is enough to cause any one who is at all fastidious in his tastes to foreswear forever drinking sweet cider. The cider can be no better than the fruit and just why the country cider maker has persisted all these years in running rotten apples, together with all the rubbish and dirt which is always present, especially if "drop" fruit is used, must remain a profound mystery. No one can make palatable cider from rotten, dirty fruit and those who persist in using such materials are putting off the time when sweet cider will be valued for what it really is—a delicious, healthful, nutritious drink.

In order to produce high quality cider the fruit should be hard ripe. At this stage it possesses its highest quality. Apples that are dirty, especially the dropped apples from cultivated orchards, should be washed. Where apples are handled in small lots a home-made washer may be made which is quite effective. A trough made of 2-inch planks 8 feet long, 14 to 16 inches wide at the bottom, and 2 to 4 inches wider at the top, and 1 foot deep will handle a barrel at a time. The trough is filled half full with water; the apples are then poured in and by using a wire potato or onion scoop shovel the apples may be moved back and forth until the dirt has been washed off. Five to ten minutes will wash a barrel of apples thoroughly. The scoop shovel is then used to transfer the apples from the washer to the mill hopper.

Winter Apples Best.

As a rule winter apples make a richer cider than autumn or summer apples. The average sugar content of summer apples is approximately 9.5 per cent, autumn apples 10.5 per cent, while winter apples average 11.5 per cent. The value of cider for manufacturing purposes is closely related to its sugar content, the higher the sugar content the greater its value. The taste of cider is determined more by the ratio of sugar and acids. Apples are sweet not because of the excess of sugar, but because of the low acid content and the converse of this is equally true as will be seen from the following table giving the acid and sugar content of three common varieties.

	Sugar.	Acid.
Red Astrachan	10.5	1.14
Yellow Transparent	10.1	.80
Sweet Bough	10.7	.1

The Red Astrachan is known as an acid apple, the Yellow Transparent as a sub-acid apple, while the Sweet Bough is a sweet apple. It will be noted that these differences are not due to the sugar content, since it is practically the same in all, but is due to the acid content which varies from .1 per cent to 1.14 per cent.

While certain varieties of apples as McIntosh, Baldwin, Jonathan, Grimes, Roxbury and Winesap are commonly recognized as producing high quality cider in those sections where they grow at their best, it is a fact that most of the late fall and winter apples, either as varieties or better in mixed lots, produce excellent cider. Even the much abused Ben Davis when sound and well ripened will bring a smile of pleasure to him who likes good, sweet cider.

Cleanliness Necessary.

Clean fruit has been insisted upon and must be had if the cider is to be of the best. This same rule will apply to the mill itself and the building in which it is housed. Abundance of water should be available and it should be used without stinting. The walls and the floor of the building should be kept clean while the mill and the cloths should be thoroughly washed at the close of the day's work. Bits of pomace or small amounts of cider left about the mill soon ferment or mold and the next run of cider becomes contaminated. The press cloths should be spread out so they will quickly dry and all adhering pomace should be shaken off. The cloths should be washed frequently. All containers in which cider is stored or which are used to handle cider should be scrupulously clean. Cider readily absorbs flavors and odors and should not come into contact with anything which will give a foreign flavor.

When the cider is taken from the receiving tank which collects it from the press it will contain a considerable amount of fine pomace which was forced out through the press cloths. The softer the apples are the greater will be the amount of pomace in the cider.

How to Clarify.

There are many simple methods of clarifying cider, any one of which will be found reasonably satisfactory. Only three methods will be discussed here.

Sedimentation.—The cider is allowed to stand for several hours during which time most of the fine pomace will settle to the bottom and the clear cider may be drawn off, leaving the pulp in the bottom of the settling tank.

Straining.—By use of a coarse and a fine meshed cloth the bulk of the suspended matter may be removed, giving a very satisfactory cider. The two cloths are stretched loosely across the top of an open barrel, the coarser meshed one on top, and the cider is poured onto the cloth. The cloths will need to be removed a few times and shaken clean before the barrel is filled. Some makers place a platform in the middle of the barrel and then fill the upper half with clean straw. A coarse cloth is spread over top of barrel to remove the bulk of pomace while the moderately packed straw will catch and hold the finer particles. A spigot at the bottom of the barrel will be necessary to remove the clarified cider.

Filters.—(a) Commercial. There are many kinds of filters that can be purchased and these will, as a rule, give best results. The question of expense must decide, if one of these is to be used. (b) Sand filters are common in some localities. The sand to be used must be absolutely free from iron and sulphur compounds. It should be thoroughly washed before using. Sand filters consist essentially of a tank lined with heavy duck sheeting having a spigot at the bottom opening into the tank below the duck lining. A layer of sand several inches thick is then placed on the duck sheeting. The cider comes from the press through a coarse strainer and is allowed to filter through the sand which removes all suspended matter, giving a clean, sparkling cider.

While all of the above methods, besides many others, are in common use the average farm manufacturer of cider will find straining the simplest. It will give a good clear cider and will not involve the cost and the labor of keeping a filter clean and sweet, nor must he wait several hours as in the case where sedimentation is used.

Cider Uses.

Cider made under the conditions described above will be unexcelled for beverage purposes or to use in manufacturing into boiled cider, cider jelly, apple butter, vinegar or for bottling. All of these are well known products.

(*Concluded on page 28.*)

The Orchard Home Department

by Mary Lee Adams

Methods of Methodists

THE Methodist church has always been one of the "livest" of Christian denominations. Methodists have taken their religion with immense enthusiasm, albeit without the somberness of the Presbyterian, the reserve of the Episcopalian, the ceremony of the Catholic or the cold plunge of the Baptist.

To those who wish nothing but success to this excellent sect, it is very interesting to learn from the Rev. E. Robb Zaring, editor of the Northwestern Christian Advocate, that Methodist leaders have opened their eyes to the fact that while the essence of religion remains the same "yesterday, today and forever," its manifestations change as does the changing world.

According to Dr. Zaring, the Joint Commission has adopted the proposed new constitution for the union of the two branches of the church. This constitution abandons the discipline which forbade dancing, shows, cards and other forms of worldly amusement. Such a step will be doubly welcome to married people who have yoked themselves with one of more liberal creed.

A devoted church woman confesses that she was brought up in the Methodist church and for years maintained the struggle between conformity and a youthful passion for dancing. Then she married a fine Episcopalian and, as was inevitable between two young people who loved the society of their fellow beings, up came the question, to dance or not to dance? The husband announced simply but decidedly, "I am going to dance. I would love to dance with you. Would you prefer to have me dance with other women?" The Methodst fold need never again lose a lamb for this cause.

Cultivate Selective Memory

HAS the person who remembers most the best memory? Some authorities suggest that this may be a very bad memory and that the perfect memory must have the art of forgetting. It must be selective and able to set aside those things which are best forgotten.

This paradox becomes rather persuasive when we realize that in everyone's acquaintance there are people who would be far better off if they could forget the troubles, real or imaginary, which beset their thoughts and lower their vitality. The lower the vitality becomes, the more the troubles take hold on memory.

If you have worked too hard for a long time and become nervous and run down, your sleep is not what it should be. You lie awake, and distressful memories crowd in and prey upon your mind. Hardly can you recall the cheerful happenings of your past.

Business men, afflicted with this form of over-acute memory, dwell on every past risk and misfortune, lose their initiative and courage, tend to petty economies and become useless as organizers.

We know that if two people, one in vigorous health the other in a low, run-down condition with little physical resistance, lose a friend or relative equally beloved by both, it is the strong one who, while grieving, looks forward. The other looks back continually and dwells broodingly and with morbid accuracy upon every detail of the happy past.

This over-keen memory is a danger signal. Its victims are described as being "memory-stricken." Those who find it coming upon them, should take strong measures to combat it by building up their general health to the highest possible level.

What Women Like to Read

NOTHING more clearly marks the educational progress of women than the change which has come over the reading matter provided especially for them. It is the duty of editors to furnish "what the public wants" but to judge by the contents of the early "home departments" and women's publications, either the editors made a very poor guess or the women wanted very poor stuff.

It is a far cry from the day when a leading woman's magazine was summed up in the phrase "a heart-to-heart talk about pillow shams." Now, when the really big men of our country talk in print, their remarks are frequently addressed to the influential class of thinking women through the columns of publications that reach a large number of women readers.

The good sense of the articles dealing with women's special interests, the fine studies on child health, child training, hygiene, public welfare, good-housekeeping, home economics, and many other subjects, shows that these worth-while subjects are presented by persons of ability who are experts in their own line. In publications that give particular consideration to women, much attention is paid to the extremely important matters of health, comfort, economy, conduct, recreation, social co-operation, religion, education.

Outside of these practical things, a veritable wealth of information is offered to the women about pretty much everything that is going on in the world. Reading the woman's department in any high-class magazine today, makes it hard to understand why the term ever bore a certain light inference of contempt. Editors have at last found out what the public wants so far as women are concerned.

Peace With Profit

EVERY reader of the AMERICAN FRUIT GROWER MAGAZINE has probably read with great interest of the Peace award offered by Edward W. Bok for the "best practicable plan by which the Uniter States may co-operate with other nations to achieve and preserve the peace of the world."

That the sum of money to be won runs up to the high figure of $100,000 is enough to make all of us open our eyes. That four subsidiary awards of $5,000 each are offered for "any plan or portions of plans used by the jury in a composite plan," gives far wider scope to the offer. While few may feel that they have a chance to win the great award, many will hope to offer at least a contributory idea.

Every one should enter the competition, but none should do so without first writing for full particulars to the American Peace Award, 342 Madison Avenue, New York City. The conditions are simple, but must be carried out, else the plan submitted will not be considered. Here is the most wonderful opportunity for service combined with the possibility of winning fame and fortune. There's nothing to lose, everything to gain. Just to make the effort will be of great benefit to the individual.

Whether the longed for practicable peace plan will materialize in something that is not only feasible but that will prove acceptable to the nations, time alone can show. We are full of hope and faith. At the very least the award will stimulate a vast amount of thought and will result in a much clearer and more general understanding of the problem.

Two students from the graduating class of a negro college entered a street car and, being rather proud of the classical course they were taking, wished to let the public know about it. They raised their voices in discussion of their studies and one inquired loudly of the other, "Is you did your Greek today?"

What to Do for the Boys

YOU see groups of young boys loafing around the corner store, punching the slot machine, hanging about the garages, and it does not require a detailed account of their doings to guess that they are not improving their time and are running a grave risk of falling into bad company.

Is your boy a pride and joy to you? Are you entirely satisfied with the way in which he is going? If so, you are indeed unusually fortunate. You must have noted that your neighbors have grave cause for anxiety about their sons.

But what are you and the other parents going to do about it? You know that the boys are all right and safe while inside the four walls of home, but they can't be under your supervision every hour of every day, and you wouldn't wish it for them. Such protective measures would never make real manly men of our boys. They must learn to stand alone. Yet it is their leisure hours, their long holidays, that cause your uneasiness and often occasion them to be subjected to bad influences.

They Need Something to Do.

Ancient Rome gave rise to the proverb, "Otia dant vitia." Idleness causes vice. Probably some such wise saying exists in most languages. Our own hymn-singing forefathers "intuned through the nose full sweetly" that "Satan finds some mischief still for idle hands to do."

The first book of the bible deals with the fall of man. When Satan found Adam and Eve in the garden with nothing to occupy them beyond enjoyment of their surroundings, he divined that it was a propitious time to induce them to yield to temptation. He was entirely successful in his efforts.

Man's punishment was to be cast out of Paradise and condemned to eat bread in the sweat of his brow. This was unwelcome to the first man as it is to the last, but slowly it dawned on our minds that work is the greatest blessing ever bestowed on man. Not only does it provide a constant interest and awaken the ambition to accomplish, but it keeps him out of all kinds of mischief.

We ought to know the lesson well by this time, but we seem very slow to learn it. We do know that work is often difficult and frequently irksome. We don't have to be taught that too much work has as many drawbacks as too much play. But we do not appreciate the value of a wise use of leisure.

What Has Been Done.

This perplexing situation has received a great deal of thought from those who specialize in the betterment of conditions for the young. The general conclusion is that if the mind is occupied with wholesome thoughts there will be little room left for the unwholesome. Get a boy interested in installing his own little radio and he will not be so eager to run off and join his gang in smoking cigarettes in some cellar.

Thoughtless fun has been poked at those persons who, realizing the immense importance of bringing the best finished product out of the raw material furnished by children, have advocated directed play for school children. "Since when," it is asked, "have children had to be taught how to play?" Yet directed play is entering more and more into the school life of the child, and directed leisure is being developed in a way that encourages full initiative in young people while guiding them away from the pitfalls that beset their path.

A very practical and cheering result has been obtained recently in a small town where boy delinquency was great and growing. It was subject for serious distress among their elders and resulted in a discussion out of which grew the experiment of establishing a boy's club. Latest reports from X-ville could hardly be improved on. They read—"There is no boy delinquency in our town."

The Kind of Thing Needed.

Naturally, the first requisite for a boy's organization is that it must be interesting to its members. Boys will enjoy one thing one year and another thing the next. But in spite of this, in every place some organization could be started for the boys which would draw them to it with the liveliest interest.

Surveys of large schools seem to indicate that the young cannot be held in their free time by such near-school occupations as reading, music and art. It is also revealed that free-time activities bear direct relation to the progress of the child in school and are thus doubly serviceable to his development. V. K. Brown, Superintendent of Playgrounds and Sports for the South Park, Chicago, spoke from an extended and wise experience when he said: "The fundamental thing remains that man is profoundly stirred not by those things which he can grasp but by those things which grip him."

The effort must be to discover the thing that will capture the boys' imagination at the same time that it develops their desirable traits, for, as Mr. Brown further says, "There is one basic problem—that of energizing our ideals, to make them operative, on the one hand in restraint of impulse, on the other in support of inspiration.

Ideas Old and New.

"The Community Center" says, in regard to all-round education: "We acted wisely in putting our money into this boy, this girl. . . . We have taught them how to spend their working hours in profitable ways, and so we turn them loose." It so happens, however, that no one has taught them how to spend their play time. The boy becomes a gambler because no one got him into a basket ball club. The girl goes to the bad because she danced in the wrong company.

In rural communities canning clubs, corn clubs, pig poultry and live stock clubs have met with success. Dramatic clubs, fife and drum corps, athletic clubs, gymnastic dancing, sports of all kinds, local improvement clubs and the entertainments incident to raising money arouse a keen interest when tactfully directed by some one who has the wisdom to leave everything possible to the initiative, inclination and management of the members.

Even so decorous an activity as a Young People's Christian Endeavor has, under inspiring leadership, transformed the Sunday afternoons of a certain rural community. No more groups of boys are to be seen loafing at the cross roads on doubtful errands. No more do the girls yawn in boredom about the house with nothing to do. Bands of young people, eager and laughing, wend their way to the school house, where a pleasant social gathering is combined with a definite aim for good.

So "the fourth R," in education, as recreation has been called, is now recognized as teaching many things that are not learned in regular school hours and, as a guardian of joyful youth, it has no equal.

The reason a young couple who once thought each other angels are apt to get a surprise later, is that so far they have worn only their company manners when together. "Good gracious!" says the astonished bridegroom, "The first night we met I spilled ice cream all over your new dress and you just smiled adorably and said it didn't matter a bit. Then and there I made up by mind to propose." "I knew you would, Stupid," airily retorts the bride, "but you didn't know I was so mad that I went home and bit a piece out of the bed post."

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CHATS WITH FRUIT GROWER'S WIFE

By HAZEL BURSELL

Clothing for the School Girl

"BACK to School!" The youngsters shout it with glee, but mother does not feel much like shouting, for she's thinking about all those school clothes the children must have, not to mention lunches for 180 school days.

But it's daughter's clothes that bring mother the grey hairs. Sonney's just naturally take care of themselves—all he asks for is a few strong, warm, comfortable garments. But daughter has been visioning herself in the creations if the shops and magazines and is much harder to suit, especially when mother has to keep in mind dad's flat purse and try and not make it any "flatter."

Ye Editor is not going to suggest any particular designs for school clothes for the young girl but just offer a few big principles to help the housewife in picking out materials and designs for new and make-over garments.

Buy Better-Grade Materials.

One of the first requisites is to pick out firm, substantial materials—goods which will not gather lint easily and show every speck of dirt plainly. Good materials should always be purchased for woolen dresses, etc., as they wear much longer and always look nice no matter how long they are worn, while the cheaper materials look "cheap" with a few wearings, and forever thereafter. It is poor economy to buy cheap materials for winter clothes.

Perhaps the biggest factor to consider is becomingness to the girl, in line, color, and trimmings. Consult her personal preferences if she has good ideas, and follow them if possible. As a general rule the more conservative colors are desirable, unless the girl can afford a large number of clothes every season. She will tire of the bright-colored, faddish things quickly. A touch of bright color may be introduced in the trimmings. Then these trimmings can be changed next season and the dress will look like new. Trims should never be elaborate for the school girl.

The best design is the straight, one-piece dress with variations in belts, collars, trims, waistlines, etc. They look appropriate for the growing girl, are simple to make and economical. Besides, they allow for her comfort and freedom of movement, and the weight hangs from the shoulders, where it should hang—two very essential health points.

Another thing to consider is the sanitary side. It is best to have some kind of a light-weight, white lining tacked into the upper part of wool dresses, which can be taken out and washed at intervals. Collar and cuff sets of washable materials freshen up the dress but mean more work to the housewife in keeping the dress in condition.

Eliminate Repair Work

In fact, everything about the dress should be chosen with the ease of repair in mind. The simple lines, firm, substantial goods, and simple trimming all mean the garment will hold its appearance with little repairing. The garment should be well-made in the first place to prevent repetition of work being necessary.

Warmth is another factor, and one which modern girls give little concern. The climate largely determines the amount and kind of clothing, but daughter should be made to understand the necessity for dressing to preserve her health—something which no one appreciates till she loses it. I'm not arguing for woolen underwear, however, unless in extremely cold climates. But I think that daughter, if she lives in the country, might easily be permitted to wear rain-proof coats and high-top boots right along with the boys.

I cannot prescribe the number of new dresses, coats and shoes she should have each year—the age of the girl, the family purse, her companions, the extent of her social life all enter into consideration. Straight, one-piece dresses and a middy suit with a pleated skirt are entirely suitable for school wear. A sweater, which the girl may knit herself, will be liked for the older girl for wear with her skirt. She will likely need one simple dark silk dress or a "best" wool dress for church and for little parties. Evening dresses are strictly taboo.

She should have school shoes, and one pair of dress shoes or slippers, all of them low-heeled, of course. Oxfords are appropriate for school wear, unless the student has to wade through mud to school. They can be purchased in heavy brown leather in smart stubby, square-toed models which just spell "comfort." She should have overshoes, if they are needed, wet feet are dangerous to health.

Warm, Comfortable Coat.

Her coat should be warm, well-made, of good material and comfortable. It should be straight-lined and becoming. Never pick a bright color for a coat, nor a displeasing color. Clever Tam caps can be purchased or made easily by deft fingers, and they are always popular with school girls. If a hat is selected, it should be practically plain for winter wear, else it will soon be shabby-looking.

As soon as the daughter is old enough, the mother owes it to both herself and her child to begin teaching her the principles of becoming and appropriate dress. She should have taken her first stitches long before on doll clothes. Then when she is in her early teens she can be a real help to mother, and will be proud of the opportunity to help make her own clothes. It may be hard to teach her at first, though it should not be.

Bound Button Holes

ONE of the most effective, economical and most appropriate ways of trimming the straight-lined, more tailored type of dress is with the bound button-hole. Two or three of them or a row down the front with covered buttons to harmonize is often all that a dress needs to give it a "trimmed-without-being-over-done look." Bound button-hole pockets are also popular.

And you don't need to feel that they are hard to make, and that you "can't make 'em look right." The instructions given here can be easily followed. If you want to feel more sure of yourself—take a piece of scrap material and make a practice one first.

The first thing to do is to decide on the material to be used in binding. Using the same material as the dress gives a richer, more dignified trim. But in the case of children and young women it is often desirable to brighten up the dress and the use of a contrasting color for the bindings is one way of doing this. Care must be exercised in the choice of material.

Measures for Binding.

Next decide on the size and spacing of the button holes—determined by the position in the garment, number of button-holes, size of person, etc. From 1½ to 2½ inches is the ordinary length, but of course pockets require longer ones.

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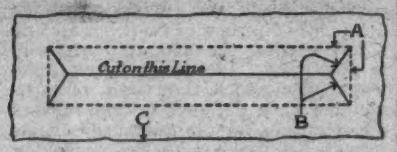
Then cut the binding in the form of an oblong—allow one-half inch on each end longer than the button-hole, and make it two inches wide. Mark the center of the button hole in the garment and the center of the binding square (I prefer a full-length line through the center). Then baste the square on the button-hole with the two center lines together and the right sides of the materials together. Draw your lines on the wrong side of the goods.

The distance that you stitch from this center line then determines the amount of binding that will show in the finished button-hole. From one-eighth to one-fourth of an inch is most often used, depending on the length of the button-hole. Stitch with the machine clear around the button-hole, making a continuous stitch-line in the form of an oblong just the length and width of the button-hole. Press well at this stage. Then cut the button-hole through the center to within one-eighth inch of the ends, and from this point cut a slant-line to each corner, as shown in the diagram, being careful not to cut the stitch line.

Lastly turn the binding through to the wrong side, and press. To make it lay smoothly put in two pleats in the binding at either end. It may also be necessary to tack the binding in place on the wrong side with a few hand stitches. This unfinished type of button-hole is more often used in garments which have linings.

Type for Unlined Dress.

The bound button-hole for the lingingless garment is made practically the same as the one just described. Proceed as before till you come to baste the binding square on the garment. In this case you turn the ends of the binding back on the wrong side before stitching, so as to give a finished end when finished. Baste the center lines together, the right sides together, as before and stitch. Be careful in stitching to keep on the edge of the binding at the ends of the button-holes. Then cut the button-hole as before and turn the binding to the wrong side.



(A) Stitching Lines; (B) Cutting Line; (C) Edge of Goods.

In this case you finish the raw binding edges by turning the edges under till they rest on stitching line and then hemming them down. You may use either the hemming stitch or a small catch stitch.

Preserves and Jam Recipies

FOR SEPTEMBER I thought it entirely appropriate to include recipes for making that favorite of family winter-stores—jams and preserves. You have all kinds of fall fruits and vegetables which may otherwise go to waste on hand. Preserve them!

Preserved Whole Peaches.

Fill a wire basket with peaches, plunge them into boiling water for 2 min. and then skins will come off easily. Then drop the fruit into cold water in order to keep the color. For 9 lbs. fruit use 2 lbs. sugar and 1 pt. water. Put the sugar and water together and when it boils, skim it. When the syrup is boiling, drop the peaches a few at a time, into the syrup. Cook them gently for 10 min., then put them into jars with the strained syrup. Boil the syrup down some after the fruit has been removed if it is thin. Seal the jars at once. Preserving the peaches whole with stones left in, gives them a rich flavor.

Watermelon Preserves.

Cut 1 lb. of watermelon rind into 1 inch squares. Allow to stand over night in salt water (¼ T salt to 1 qt. water). Drain, and freshen in clean cold water for 1 hour; drain and cover with syrup made of 2 c sugar and 1½ qt. water. Boil for 25 min. Let stand immersed in syrup for several hours. Add the juice of ½ lemon and 3 slices of lemon additional for each pound. Cook until transparent or about 1 hour. Let stand until cold. Pack into jars or earthern or stone crocks. Keep well covered but not necessarily air tight.

Sunkissed Jams.

The sunkissed jams are best made from such small fruits as will retain their wholeness under heating—strawberries, gooseberries and loganberries.

Put into the kettle barely enough water to cover the bottom, then add a cupful (or other small measureful) of berries and sprinkle over these an equal measure of sugar; again a measure of berries and an equal measure of sugar. Do not fill the kettle full, nor nearly so—rather use several kettles, with but little depth of fruit and sugar in each. It is not desirable to stir the fruit as it is heating for fear of destroying the wholeness of the berries.

Keep over the fire only until all of the fruit is thoroughly heated through, gently pressing the top berries down into the liquid as the sugar melts and juice forms.

Uncooked Jams.

For making jams without cooking, select such small fruits as can be thoroughly mashed. Strawberries, currants, raspberries, wild blackberries and loganberries may be used. As in the sunkissed jams, take measure for measure of sugar and berries. Be sure that the berries are not overripe and that they are absolutely free from taint or blemish.

Simply mash together in any convenient way with large wood spoon or with potato masher equal measures of fruit and sugar. Be sure that not an unbroken particle of fruit remains. For greater certainty keep the mixture within easy reach for several days before putting it into jars for setting away, and every day mix and stir and beat and mash until there can be no possibility that a particle of fruit has escaped unbroken. Then after filling into jars for keeping, do not seal air-tight. Simply tie a paper over the top, or if in glasses put on the lids, or anything to keep out the dust and let the air in. Keep in a dry place.

Pear Butter.

2 c. ground pears, 2 t. cinnamon.
cooked tender. ¼ t. cloves.
2 c. sugar. ¼ c. vinegar.

Pare fruit, core and run through food chopper. Cook until tender. Do not add any water. Put through the food press and crush lumps. Then add sugar, and vinegar, and cook until thickened.

Prune Jam.

½ lb. prunes. ½ c. sugar.
1 t. cinnamon. 1 T lemon juice.

Soak prunes and cook until very tender. Remove stones and chop. Add sugar and lemon and cinnamon. Cook until clear and thick.

Apple Butter.

Pare, core and quarter the apples, using 1 qt. of sweet apples to every 4 qts. of sour apples. Cover with cider and cook, stirring constantly. Stir until the apples are reduced to a marmalade thickness, then add sugar.

Weigh the apple mixture and add half the weight of sugar and if desired, cinnamon or any other spice liked.

Salt and Sugar Jam.

6 oz. sugar. 1 lb. fruit.
¼ oz. salt.

Make jam as usual. Cost lessened by 2 c. on glass is sugar is 9 cts. a lb. Tried strawberry, pineapple, orange, lemon, rhubarb and apricot. Jam should not be eaten for 5 or 6 days.

Peach Jam.

2¼ lb. peaches cut in small pieces.
1 lb. sugar.
6 whole allspices.
1 cracked peach seed.
1 in. ginger root.
½ c. peach juice.
½ t. whole cloves.
1 t. cinnamon bark.
1 sprig mace.
(Tie spices in cheesecloth bags.)

Cook all together until thick as marmalade and clear. Pack hot in hot jars and seal at once or process.

Spiced Pears.

Wash one-half peck of small pears, prick with a fork and cook in boiling water to cover until soft. Take out with care, put in a stone jar and pour over the following syrup:

Mix 1 lb. of white sugar, 1½ c. vinegar and 1½ T. each of whole cloves and stick cinnamon, broken in pieces. Bring to the boiling point and let simmer 3 min. Cover jar and let stand 2 days. Drain off syrup, bring to the boiling point, let simmer 3 min. and pour over fruit; repeat. In the jar keep a muslin bag in which is tied 2 T. each of whole cloves and stick cinnamon.

Gingered Watermelon Rind.

To each pound of rind cut into 1 inch squares add 2 qts. of water and 1 oz. slacked lime. Let stand in lime water over night. Next morning drain and let stand 1 to 2 hours in fresh cold water. Drain well and boil rapidly in strong ginger tea (1 oz. ginger to 1 qt. water) for 15 min. Drain, put into a ginger syrup made by using 1 qt. of strained ginger tea with 1 qt. water and 1½ lbs. of sugar. Cook until tender and transparent (about 1½ hours). After boiling ½ hour add half a lemon sliced thin. Place in shallow pans to cool, having the rind well covered with syrup. When cool pack, cap, clamp, and process.

Gingered Pears.

Use pears not quite ripe, peel, core and cut into thin slices. To 6 lbs. of pears, allow 6 lbs. sugar, 1 cup of water and the juice of 4 lemons. Cut the lemon rinds into thin strips and add them. Also add ½ lb. of ginger root cut into pieces.

Simmer until thick as marmalade. Pack like peach jam.

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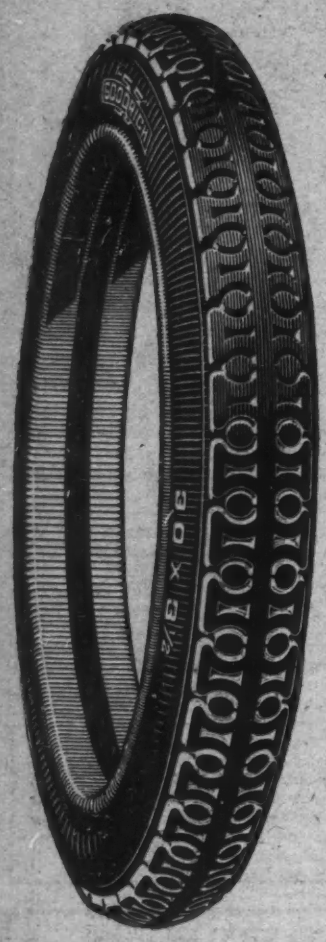

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Cider Manufacture

(*Continued from page 24.*)

They are also valuable food products (except vinegar) and they offer a legitimate and simple way whereby the apple grower may convert his worthless fruit into profit returning products. Just what the fruit grower will do with his cider will need to be determined altogether by his own peculiar conditions. Many eastern growers find the sale of sweet cider to the roadside trade the most profitable means of disposing of their culls while a few market the bulk of their crop in this way. The great trunk highways over which thousands of automobiles pass daily offer unparalleled opportunities for the producer to come into direct touch with the consumer. Hundreds of these people are thirsty and the properly conducted roadside cider mill offers a welcome relief to the thirsty traveler. By careful methods of manufacture and by using ice to keep the cider cold it may be sold several hours after making without danger of violating the provisions of the prohibition law. Cleanliness of premises and mill, with exhibits of the kind of apples used and strict adherence to the provisions of the prohibition law will soon establish a reputation that will draw custom from long distances and will build up a business that will dispose of hundreds of bushels of cull apples. Some growers convert the cider into vinegar, others are beginning the manufacture of apple butter. In all cases these products are sold directly to the consumer or to the local stores.

When the fruit grower can market his culls at a price that will pay him a profit he will have come into his own and fruit growing will have for him a greater interest than before, and what of the thousands of consumers who are also to profit by the utilization of this waste material by being able to purchase in quantity at reasonable prices (we hope the price will be reasonable) those delicious things which may be made from the humble, lowly cull apples!

Rambles of a Horticulturist

(*Continued from page 5.*)

shippers. Rhea and Roane counties also produce early apples nicely. In Sumner county, in the vicinity of Portland, early apples are doing extremely well, especially the Improved Red June and the Liveland Raspberry. John Daniels and the Donahue Bros. are making a great success of early apples in that district. George S. Elder, near Chattanooga, has bought nearly 5,000 acres of land and is developing a 250-acre apple orchard. Prof. O. M. Watson, formerly of the state university, has an orchard of his own in Sevier county. He is also superintendent of the Cherokee Orchard Co.

The orchards in that district range in elevations from 1,800 ft. to 3,000 ft. The mountain conditions seem to give high color, good size and quality to the fruit. The Baldwin develops high color, however, by September 15th. Grimes, Delicious, Stayman and Winesap are being extensively planted. The Delicious under those conditions is an early fall high-class table apple. Northern Spy is ripe by October 15th.

In these mountains one runs against old varieties now rarely grown. Some of these have been given local names, such as the Black Hoover, Fallawater, Virginia Beauty, Mountain Boomer and Summer Rambeau.

In the Columbia district apple growing is being very rapidly developed. Horace Rainey, Jr., is developing one of the largest orchards in that district. He has some 40 acres of bearing trees about 23 years of age, 100 acres of young apples and 30 acres of sour cherries. Such varieties as Chicago, Black Ben, Champion, Delicious and Senator are produced. The Delicious does unusually well. The fruit is large and well distributed and the prices top the market. The Senator is very subject to cedar rust. The Black Ben does very well. The Champion develops rather poor color and is very subject to blotch and scab. The Chicago is a very satisfactory apple and makes a very large tree, although the fruit is small but of good quality. Mr. Rainey is practicing up-to-date spraying. When he took hold of the orchard it was somewhat run down but by a combination of tillage, clovers, cow peas and good pruning the orchard is rapidly coming back. He uses Bordeaux sprays to fight fungus diseases and uses a spreader in most of his sprays. His cherries sell locally at $5 a crate and every apple which is produced can be sold at the orchard for $2 a bushel and better.

Tennessee is bound to come to the front horticulturally. Such growing cities as Knoxville, Chattanooga and Memphis, as well as dozens of smaller cities and towns, make ideal markets. While the highway system has not been well developed as yet, still there is agitation for a good highway system. Very comfortable hotels can be found in all the county seats and an automobile trip through that commonwealth is a very delightful experience. Some day a few apple men of New York, Washington and Michigan who want a pleasant climate with few extremes, who delight in mountains and great stretches of woodland, who love to hear the thrush, the Kentucky cardinal and the mockingbird revel in song are coming down to this land of opportunity where by the application of up-to-date methods they are bound to reap a rich reward.

Increasing Orchard Profit by Community Drying Plants

COMMUNITY fruit-drying plants have been found to be a successful means of increasing the orchard profits of the small growers who have a surplus which they are unable to market in any other way, according to the United States Department of Agriculture, if the total quantity of such surplus in a community is sufficient to justify the necessary expense. The organization of such a co-operation plant should be governed by the same fundamental rules that have been found necessary in the development of other co-operative ventures.

It must first be definitely ascertained whether the quantity of unused fruit is actually such as will make the establishment of an evaporating or drying plant profitable. This information can only be obtained by a careful canvass of the district and a tabulation of the results. The making of such a canvass is a task calling for conservatism and the exercise of good judgment, for the reason that unintentional but gross overstatement of the unmarketed and unused portion of the fruit which could be used as exaporator stock is the rule rather than the exception. It must be borne in mind that in the case of apples, only mature, reasonably sound fruit of fair size will make a marketable dry product and that estimates which include premature drops, specked and decayed fruits, and small-sized cider apples are worse than useless because misleading. The canvass should take into account all fruits grown in the district, the location of the center of supply, the length of time over which the ripening of each will extend, and the maximum quantity per day which the plant will be required to handle.

With this data in hand it will be possible to determine the size and type of evaporator needed. As the fruits will in most cases be varied the plant should be of a general-purpose type, so constructed that it will handle equally well all materials, such as apples, peaches, plums and prunes, berries, sweet corn, and beans.

Weeds In the Orchard

IN the fall of the year weeds can be a benefit rather than a detriment in the young orchard. The trees should by this time have made all the desirable growth needed. The presence of the weeds will help to harden the trees.

No. 1813. Attractive Tie-Blouse.
Cut in sizes 16 years, 36, 38, 40, 42, and 44 inches bust measure. Size 36 requires 1½ yards 36-inch material with ⅜ yard 36-inch contrasting.

No. 1590. Jacquette Blouse.
Cut in sizes 16 years, 36, 38, 40, 42, and 44 inches bust measure. Size 36 requires 1¾ yards 40-inch material with ⅝ yard 27-inch contrasting.

No. 1772.
A glance at the accompanying diagram of this blouse will convince you that it is very easy to make. Cut in sizes 16 years, 36, 38, 40 and 42 inches bust measure. Size 36 requires 1½ yards 32-inch or wider material with 2 yards of binding.

No. 1800. Slenderizing Style.
Cut in sizes 36, 38, 40, 42, 44, 46, and 48 inches bust measure. Size 36 requires 4¾ yards of 40-inch material with ⅞ yard 36-inch contrasting.

No. 1682.
This charming frock is made from one piece of material as you will see by the diagram. Cut in sizes small, medium and large. The medium size requires 3⅝ yards 36-inch material with 5½ yards of binding.

No. 1804.
Another easy-to-make style is the one sketched here. The diagram explains how a single length of material novelly cut makes the finished affair in larger view. Cut in sizes 16 years, 36, 38, 40, 42, and 44 inches bust measure. Size 36 requires 2⅞ yards 36-inch material.

No. 1469. Neat House Dress.
Cut in sizes 34, 36, 38, 40, 42, 44, and 46 inches bust measure. Size 36 requires 3⅝ yards of 36-inch material with ⅝ yard 36-inch contrasting.

No. 1631. Attractive Slip-On House Dress.
Cut in sizes 34, 36, 38, 40, 42, and 44 inches bust measure. Size 36 requires 3¼ yards 36-inch material with ¼ yard 36-inch contrasting.

No. 1514. Costume Slip.
Cut in sizes 16 years, 36, 38, 40, 42, and 44 inches bust measure. Size 36 requires 2⅝ yards 36-inch material.

No. 1758. Trim-Fitting Corset Cover.
Cut in sizes 36, 38, 40, 42, 44, 46, 48, and 50 inches bust measure. Size 40 requires 1 yard 36-inch material with 1¾ yards binding.

No. 1300. Middy Dress.
Cut in sizes 4, 6, 8, 10, 12, and 14 years. Size 8 requires 2 yards 36-inch dark material with 1⅝ yards 36-inch light material.

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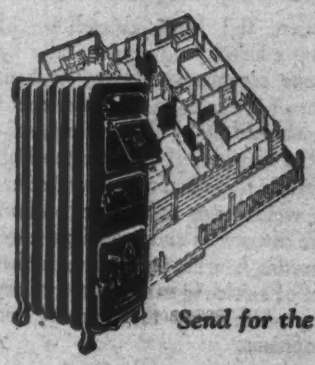

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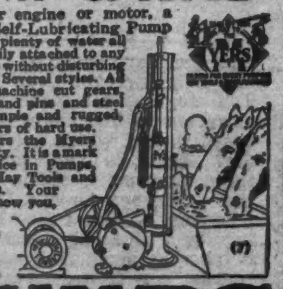

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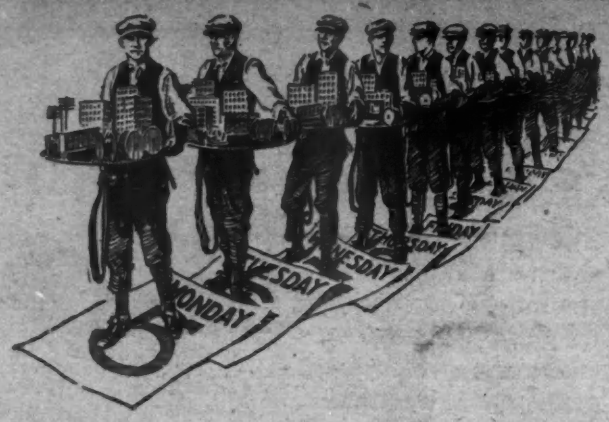

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This nation-wide construction, this large expenditure of funds, could not be carried out efficiently or economically by unrelated, independent telephone organizations acting without co-operation in different sections of the country. Neither could it be carried out efficiently or economically by any one organization dictating from one place the activities of all. In the Bell System all the associated companies share common manufacturing and purchasing facilities which save millions of dollars annually. They share scientific discoveries and inventions, engineering achievements, and operating benefits which save further millions. But the management of service in each given territory is in the hands of the company which serves that territory and which knows its needs and conditions.

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Profitable Orchards

by C. O. Weiss, Washington

THE orchardist should consider his orchard as being 100 per cent profitable. How many fruit growers are there in this district that know definitely which trees are not producing the crops they should, and which trees are his maximum producers? I am speaking of the fruit grower who has an acre or more of fruit trees. This is what often happens in the orchards in this district. You visit a fruit grower and he tells you that he has a tree that he would like to have you look at and remedy its condition. You walk into the orchard with the grower and after some search the tree is found, but time has been lost. Then again, there may have been some other things the grower had wanted you to see, perhaps he forgot about them or they slipped his mind.

Again, you ask him about his production of fruit and he can't tell you. You ask him, "Are all your trees producers? Have you any loafers or boarders? Which are your high producers? Which variety gives you the best yields, which the least?" He is not in a position to tell you. Why? He has kept no record of it. What am I driving at? I will proceed to tell you. You will answer that it is too much work. Is anything too much work if it will net you more money than you have spent on the operation and help increase your profits also? Tell me, is it too much work for the dairyman to find out which cows are boarders and which are high producers? Again, is it too much work for the poultryman to obtain this information and when he has found out his mistakes to correct them? Is it working for a profit or a loss? They say it takes as much feed and care for a boarder cow as it does for a high producer. With fruit trees it takes the same amount of cultivation, spraying, fertilization and perhaps more pruning, because the tree may be a light producer and still be in healthy condition and going to wood instead of fruit, and this requires more pruning, but also it would take less thinning of the fruit, but this spells less fruit and also smaller profits. Of course it is the fruit grower's ideal to have uniform, medium crops of fruit through a period of years rather than have bumper crops one year and light crops the following year.

Supposing you have an orchard of one or more acres in size. What would be the procedure? I believe it advisable to plot out or map out the orchard and letter the rows A, B, C, etc., and number the trees in the row, one, two, three, etc., on the map and use tags of metal on the trees in the orchard. If you have a large orchard I would divide it into convenient blocks and letter each block A, B, C, etc., and then follow the same method of lettering the rows and numbering the trees in the row. I believe that a map of this kind should be made when the orchard is planted. Records can be kept along with the map from year to year, stating what has been done each year, that is, along the lines of soil management, crops interplanted, fertilizing, also varieties in the orchard, filler and permanent trees, diseases or pests, age of trees or any other important data that is essential. You have noted without a doubt that horticultural practices change, and the ones that are bringing you the best returns on your ranch are the ones to use. If any changes are to be made do it gradually, or be absolutely convinced that it is the proper thing to do. In other words, that it has been tried out to your satisfaction and proven satisfactory.

Now that you have made the map and have the rows and trees lettered and numbered, you can go through the orchard while it is young and, if you notice here and there that certain trees are not doing well, perhaps the prevalence of certain pests and diseases, off varieties, etc., you make note of these in your book with the row and tree and when you have time, you go back to these trees to find out and diagnose the trouble. You save yourself the time of locating the tree; you also get in the habit of taking down notes, to which you will refer from time to time. Remember, there are rainy days and off days in which some of this work can be taken care of, and, then again, the trees may need immediate attention. But you have worked yourself into a method by which you are not apt to forget about it.

The biggest factor in favor of this method is this: When your trees come into bearing you make a tree to tree canvass in the summer, taking a record of the crop of fruit that each tree produces. (The method of estimating the crop of fruit each tree produces is obtained through practice. The system I was started in on, was first counting the number of apples per tree and either figuring it in boxes or barrels. Then gradually you can size up a tree and estimate its production. It also pays to look into the tree, because sometimes the fruit is only borne on the outside of the tree and you are figuring a certain amount for the fruit you do not see and your figures may be too high. This is especially true with old trees.) This system is carried on for 4 or 5 years, depending on the season, and soon on your chart you will notice the trees that are producers and those that are not giving the returns. You will also note the varieties which are doing the work. The non-producers I would regraft into producers, but keep the varieties intact. Remember, your harvesting costs are greatly increased when your different varieties are scattered throughout the orchard. I believe I would graft my non-producers with scions from known performers.

We hear so much about the dairyman and the poultryman with his high producing cows and poultry, let them hear about the orchardist with 100 per cent good producing trees. I have tried out this system in the orchards in Virginia and have found it to pay. It was brought to my attention in a bulletin written by C. I. Lewis when he was professor of horticulture at the Oregon Agricultural College.

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That Association of Yours

by Tim and John

Financin'

ONE day as Tim was coming home from town, where he had gone to renew a note at the bank, and was consequently thinking about financial matters, he saw John in the barnyard watering the horses.

"Good day to yez, ye're jist the man I be lookin' fer and how the divil do that association of your'n handle their financial matters, payin' fer yez building, buyin' baskets an the loikes. It's little I be hearin' about it."

"Glad to tell you Tim. There's three parts to it."

"Sure and I be thinkin' it'd be aisier to kape track of it in wan," said Tim.

"No, it's really easier to remember the other way 'round. First, when we form an association and take in new members, they got to pay a small amount—$10.00 in our association, in some associations it's $20.00 dependin' on the number of members. It's figured so it'll amount to about $150.00 for the association. That $10.00 is just like initiation in the Grange. We never get it back. That money is used to pay our incorporation fees and for membership in the Central. The membership costs $100.00 for the whole association once and for all."

"Wan hundred dollars! Sure and phwat do that Cintral be doin' with the hundred?"

'Hold on a minute," said John, "you're goin' too fast. First that Central is us; it ain't no third party, and that money is used to buy desks, typewriters, adding machines, safes, automobiles for inspectors, etc."

"And that packin' house yez built and the graders and sich that ye've got in it—how'd ye be payin' fer it?"

"That's the second part of the financin'. The buildin' cost about $4000.00, the graders $2000.00, the railroad switch $1200.00, the land $800.00. Let's see that's $8000.00 in all. Well, I've been a little rough in my figures; but it all amounted to $8500.00. We put a mortgage of $2500.00 on the building, that left $6000.00 to raise. There was 15 of us, that's just $400.00 apiece. Most of us was broke last spring when we started in so we each give our own note to the bank for $400.00 and turned the money over to the association and paid for everything."

"Will ye ivir be gettin' that back?" inquired Tim.

"Sure we will. In some associations the members have got more'n a thousand dollars invested. Even with our $400.00 we want to be sure we'll get that back if we ever want to sell the farm, or for any other reason want to get out of the association. Some of us might die. I want to make sure Susie'd get that $400.00 back if I died first."

"How do ye be knowin' she will?" again interrupted Tim.

"That's just what I was gettin' at. The association gave each of us a Certificate of Indebtedness for $400.00. It's somethin' like a stock, Tim."

"I'm hopin' it ain't like iny iv thim bum oil stocks."

"No, it's not, because it's secured by real property right here at home. In case I die or sell the farm the association agrees to pay that back to me or my estate."

"Faith and supposin' half of yer men git dissatisfied some year? I'm hearin' that that big buyer over to Phoenix waz tryin' alriddy to git some of yez members to be quittin. Supposin' they do, John, do they be gettin' back their $400.00 right off?"

"No," smiled John, "in the first place that feller ain't goin' to make much headway botherin' our members but even if he does that Certificate is drawn up so's that if the association don't want to they haven't got to pay the $400.00 back faster than $80.00 a year for five years."

"Sure it's a joker yez be havin' in that certifykite business," said Tim.

"Well, you might call it that, but really it's for the protection of loyal members who want to stay behind this thing."

"Annyway," said Tim thinking of his visit to the bank and appreciating that misery likes company, "There's interist ye'll be havin' to pay to the bank too, John, fer that $400.00 note."

"That's true," said John, "but at the same time the association pays me 6% interest for that $400.00, so soon as I get it from the association I pay it over to the bank."

"Payin' yer interest," says Tim, "For the love iv Mike, where do they be gettin' the money to pay with?"

"Out of the packin' charge," says John. "That's part of that 9 cents a barrel overhead that I was tellin' you about yesterday."

"Sure and that looks like a bit iv frinzied finance," said Tim, beginning to be puzzled. "Ye be payin' more'n need be fer packin' iv apples and then they be payin' ye back interist and thin ye be takin' the interist money and be payin' yer own interist to the bank. Where do you be gittin' anywhere on it?"

"Wait a minute," said John, "don't get mixed up. You know Hank Shepard had 2000 barrels; I only had 500 this year. He used that building four times as much as I did, but he only paid in $400.00 same as I did. About 3 cents a barrel of that 9 cents overhead we were talkin' about yesterday is this here interest money. Hank with his 2000 barrels paid $60.00 to'rds the interest; I with my 500 only paid $15.00."

"I'm seein' that all roight, all roight," interrupted Tim.

"Well, then the Treasurer paid me back $24.00—6% on the $400.00. He paid Hank $24.00 too. Hank put in $60.00 and got back $24.00; I put in $15.00 and got back $24.00."

"I have it!" said Tim, "that be equalizin' up his payin' in only $400.00 same as ye but usin' it four times as much.

"But some foine day, John, ye're goin' to be havin' to pay that $400.00 note at the bank, or ilse payin' somethin' on it," thinking again of his recent visit to the bank.

"Sure we've got to, Tim, some of our members have already paid their notes all up at the bank. I've paid $200.00 of mine. Some of the boys can't pay only about $50.00 this year, but that doesn't make no difference. Hank Shepard's got his all paid up. He gets 6% from the association and he don't have to pay that $24.00 to the bank any more for interest. He keeps that himself. And me with $200.00 paid, out of the $24.00 interest I get, I pay only half of it to the bank now and I keep the other $12.00 myself."

"Sure," said Tim, "that's jist what the priest be sayin' the ither day—'Thim as has, gits."

"And then, there's the third part of the money matter," continued John.

"That barrel stock we're usin' down to the cooper shop's all paid for, so's the carload of baskets that just come in. By payin' cash for them soon's they arrive, we get 'em that much cheaper."

"Foine and all roight," said Tim, "but who'll be payin' for thim? Ye're tellin' me the ither day ye hadn't paid fer yere's yit and wouldn't be payin' it until ye're gettin' yer money for yer fruit next fall."

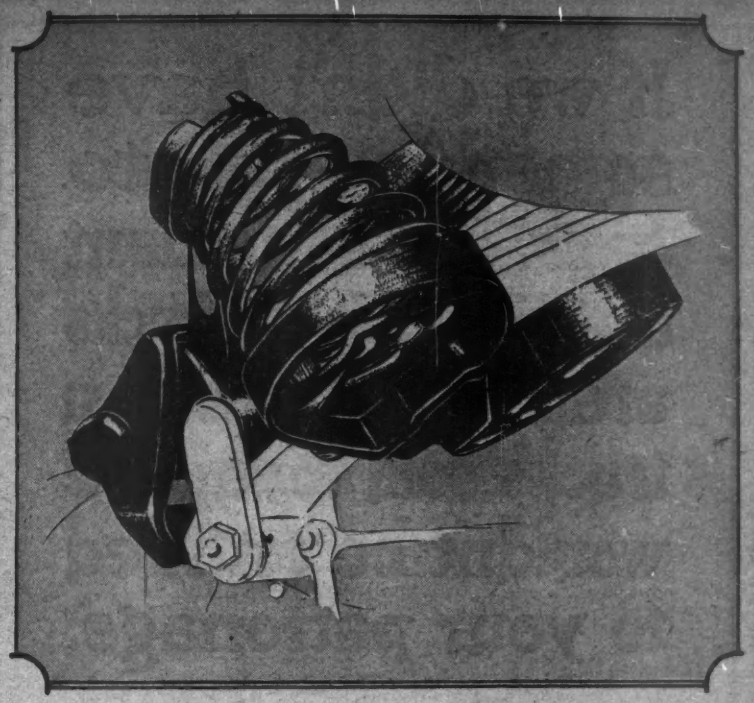
"Well, that's just the point I'm gettin' at," said John, "that's what we call temporary financin'. Each of us give a demand note for $500.00 without interest to the association to be used as collateral security."

"A note without interist, is it? Sure that's a new wan in me rikillicshun," said Tim.

"Well it's a fact. Stop interruptin' me and let me tell you how they do it. The Treasurer's got 15 notes of $500.00 apiece without interest. When the barrel stock came in our Treasurer had to pay for it. He hasn't got any money to do it with, but he goes to the bank and gives them a note in the name of the association signed by the President and Treasurer."

"Sure and don't that be makin' him liabil? Supposin' ye're all forgettin' payin' fer it. It's liabil he is."

"No, that's just the point I'm getting at Tim. Take this car of baskets that just come in, cost $500.00. The Treasurer gave the Association's note to the bank for $500.00 and pinned onto it



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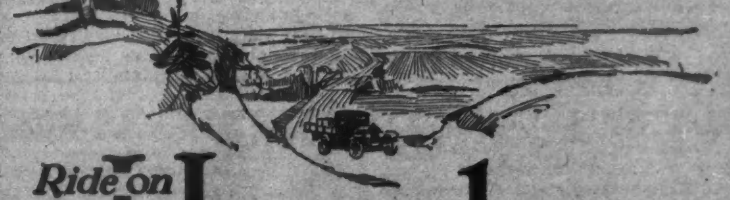

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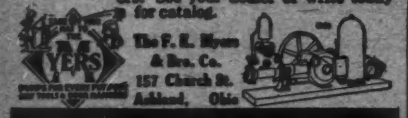

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D. M. LEE, 49 So. Clinton St., CHICAGO.

one of them $500.00 collateral notes that each of us made out. That barrel stock cost $2000.00. He gives an association note for just what it cost and pinned another four of them $500.00 collateral notes to it. Then next fall when we start packin', there'll be labor to pay. He borrows enough money at the bank each week for the pay roll and puts on one or two notes, whatever's necessary for that. Then next fall when we begin to get money in from our fruit, he will pay off them notes at the bank, take off them collateral notes, put them in the safe deposit vault and use them next year same way."

"And the interist, John, I nivir be hearin' of annybody gettin' money out iv a bank without interist."

"Sure Tim and we pay interest. The note that the Treasurer makes to the bank does bear interest, but the collateral notes don't bear any interest. In this way we pay interest on money only when we are usin' it."

"Saints aloive and that's jist the way that that Sandy MacIntyre's actin' about me cauldren kittle. Iviry year he's come over to borry it fer his butcherin,' saying it's cheaper to borry than to be owin' wan."

"That's exactly the idea, Tim, it's cheaper to borrow the money for the short while we want it than to pay that money in and have it lyin' 'round idle the rest of the time. And them demand notes are just collateral for the purpose of makin' the association note good."

"Sure and ain't that Association good for what it wants to be borryin'" challenged Tim "with min the loikes iv ye, Hank Shepard and ithers belongin' to it?"

"I suppose it is Tim, but this is rather new for our banks and we want the bank to be full protected. Besides there's another feature about this demand note."

"Annother wan iv thim jokers," said Tim, thinking of the provision on the Certificate of Indebtedness which they had just been talking about.

"Yes, this is another joker," agreed John, "but everybody knows it so it ain't a blind joker. That demand note has got a little sentence on it which makes it possible for the association to immediately demand it in case I break my contract with the association."

"Sure, and did ye be havin' to have a contract too, can't ye be dependin' on the word iv annywan? If I waz joinin' yer association, John, and me agreein' to be puttin' me fruit in it too, ye should be thinkin' me word'd be as good as me bond, or a contract, or a collateral note, or the loikes," said Tim, his Irish blood beginning to boil.

"Sure, that's all right, Tim, I know you'd live up to your word but supposin' there was two or three others that might be tempted. By pullin' their fruit out, your packin' charge would be increased and be a real damage to you. The contract is meant to hold the fellow that is shaky and it ain't doin' any damage to men like you Tim."

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I should also like very much to know if it is possible to procure now plants of what was quite well known in the middle west thirty-odd years ago as the invalid's strawberry. It was so agreeably palatable and digestible that it was widely sought by many whose digestion was not found equal to the easy assimilation of other kinds of strawberries. Its commercial name, as I now recollect it, was the Brunette. I think it a great misfortune if this variety has been allowed to become extinct with nothing left to take its place.

It would be a fine thing if fruit growers generally, domestic as well as commercial growers, would co-operate diligently with our experiment stations and with each other by being constantly alert not only to new varieties of fruit but to finding and re-establishing the best of the old-fashioned kinds. Doubtless many a neighborhood has a berry, or plum, or peach, or apple, or grape famed in its own section for surpassing table quality or other great excellence that would win as wide a popularity in other sections if its superior merits were only known.

The commercial varieties, selected and bred for standing up well under shipping conditions, do not always hold first place for high quality when they come to the consumer's table. Our home gardens and home orchards can afford and should certainly grow the finest of table quality in all fruits and berries, and the old-fashioned varieties of matchless quality for the family table and the home market should not be allowed to perish from the earth.

W. F. MARSHALL.

Box 412,
Raleigh, N. C., July 21, 1923.

GROWERS having loganberry patches and who desire to start some tips this fall should bear in mind that the early tipped plants are the best. They seem to form roots sooner and have a better root system and make more desirable plants than those which are tipped late in the season.

NICOTINE dust is controlling the walnut aphis in California.

YOU NEED COLUMBIAS

End all that fussing with faulty ignition by getting a Columbia Hot Shot Battery. Full delivery of power in its water-proof, moisture-proof, super-durable steel case. No mechanical complications to get out of order, or eat up money on repairs. The largest laboratory, devoted to dry cell development, insures a uniformly high quality product for tractor and gas engine ignition.

Columbia Dry Batteries
—they last longer

Columbia Dry Batteries for every kind of service are sold at electrical, hardware, and auto accessory shops, garages, general stores. *Insist upon Columbia.*

From 1910 to 1921 the cost of highway construction was $2,526,000,000—an investment that will earn double dividends when the highways are lighted.

Twenty-four-hour highways

In this age of electricity the General Electric Company's monogram has marked the trail of electrical progress. You will find it on the giant generators used by lighting companies; on outdoor lighting systems; and even on the lamps and little motors that mean so much in the home. It is a symbol of useful service.

Good roads produce greatest dividends when used 24 hours a day.

An electrically lighted highway is a working highway—after sunset as well as after sunrise. The additional cost is small compared to the original cost of the road.

And lighting the highways brings electric service to the community for the use of all, indoors or out.

GENERAL ELECTRIC

Field Mice

IN the fall of the year growers who have trees up to 10 years of age, planted in clover or alfalfa sod, should take great care that there is a circle around each tree from which weeds, clover, alfalfa and similar materials have been removed so that there will be no hiding place for the mice. Many a tree is thought to die from some unknown disease whereas the mice have created the damage and by removing litter from around your trees and using a little poison the mice can be generally controlled.

Rabbits and Mice

AFTER using various methods to avoid damage from rabbits, I have settled down to the wooden veneer as the best, but I think they should be at least 22 in. long as we must count on snow, and 24 in. would be still better. As to size of wire, No. 22 is plenty large enough as the protectors must be taken off in late spring because of the woolly aphis. I use two wires to each protector, which is wrapped cone shaped around the tree, the top pinched tightly around the tree and the other at the middle so the wires will not slip to the bottom from shrinkage of the veneer. No apple tree should have less than 2 ft. of stem, and some droopers need 4.

Veneer protectors are not a sure protection against mice and it may be that in some cases screen wire is better. I practice going over the orchard about the first light snowfall and placing bits of poisoned beefsteak in the mouse holes or under small boards, raised an inch or two.

I also use the No. 12 rolls of No. 22 enameled wire to tie up grape vines after trimming, the roll being cut into two pieces for protection, and eight pieces for grape tying. A carpenter's nail pocket is handy to carry the wires in.

In case the trees are headed very low, as with dwarf pears, one must resort to a repellant wash, applied with a whitewash brush.—Benjamin Buckman, Illinois.

Clean Packing Houses

BEFORE starting the heavy pack of apples and pears, it is always desirable to give the packing house a good cleaning out. A grower should never keep decayed fruit of any kind in his packing house. Plums and peaches so left will often decay and brown rot will develop and the mummies will carry over the spores of brown rot, which will later attack the fruit brought into the packing house. Decayed apples and pears often carry over scab, which is a menace to the fruit.

SOUTH Africa expects to have three and one-half million citrus trees growing by 1930.

"Stop, Look and Listen"

Many Farmers in western states are suffering because the prices of their products are lower in proportion than the prices of things they buy. As a remedy they are being urged to support a radical and revolutionary policy of regulation of railroads.

We are in sympathy with the farmer, because his prosperity and ours are interdependent. But we also know that the conditions from which farmers are now suffering are **temporary.** Prices of farm products were low after the panic of 1893, and western farmers suffered severely. The bad conditions of that time passed away, the development of the railways made possible later a vast increase in production and wealth in western territory, and its farmers enjoyed a long period of great prosperity.

Increase in Railroad Service

There is no denying the fact that the increase in the value of western farm property would have been impossible but for the great increase in railway facilities during the past thirty years. As railways extend their lines and improve their facilities, farm lands adjoining are worth more.

Between 1890 and 1920 the miles of railways in western states increased from 86,000 to 146,000. Railroad freight business handled in 1890 was equivalent to carrying 26 billion tons of freight one mile. In 1920 it was equivalent to carrying 145 billion tons of freight one mile, an increase of 457 per cent. The vast increases in the facilities of the railways and in the business handled by them for the people of the western states was **made possible solely by the investment of billions of dollars of new capital in the railroads.**

Western Railways Not Prospering

Advances in wages, in the prices of fuel, materials and supplies and in taxes—most of which occurred under government operation during the war—made it necessary to advance railway rates in 1920. The freight rates of the western railways have been reduced an average of 16 per cent since then, the largest reductions having been made in freight rates on farm products. **The reductions of rates on the western railways alone since 1921 are costing them and saving the public $320,000,000 a year.**

Freight rates are still higher than before the war. But operating expenses and taxes still remain so much higher **very few western railways are earning anywhere near a "fair return."** The average earned by the western railways upon the valuation by the Interstate Commerce Commission, was, in 1921, only 3.59 per cent; in 1922, only 4.03 per cent, and in the first five months of 1923, only 4.20 per cent.

If their rates had been 12 per cent lower, they would not, as a whole, have earned a dollar in the first five months of 1923 with which to pay interest on their bonds, much less dividends on their stock.

These facts show that a large majority of the western railways are suffering with the western farmers from adverse conditions.

A Permanent Destructive Policy to Remedy Temporary Conditions

As a remedy for the **temporary** conditions from which the farmers are suffering they are being urged to favor a policy of regulation which would **permanently** reduce and restrict the net return of the railways to less than it ever has been, even in years of panic and profound business depression. This would be the effect of the arbitrary reduction of more than one-third in the valuation placed upon the railways by the Interstate Commerce Commission which is advocated by certain public men.

If such a radical and confiscatory policy of regulation had been adopted a quarter of a century ago it would have stopped the development of the railways. Stopping the development of railroads would have made impossible the great prosperity and increase in wealth the farmers enjoyed in the twenty years between 1900 and 1920.

If this policy should be adopted **now** it would frighten all investors away from railway securities. It would immediately stop all railroad development. And, it would prevent railroads from increasing their capacity to haul your freight.

Then, when the **temporary** conditions from which the western farmers are now suffering had passed, they would find there had been adopted as a **permanent** policy a scheme of regulation, which, by preventing an increase in the railroad service that could be rendered, would make it impossible for the farmers or any other class of people to prosper and increase their wealth as they did for a quarter of a century prior to 1921.

"Stop, Look and Listen"

Is it not time to "Stop, Look and Listen!" on this subject of railroad regulation?

Farmers will need increased transportation in future as much as in the past. The radical, confiscatory and destructive policy of regulation of railways now being advocated is a deadly menace to the future prosperity of every farmer in the western states.

WESTERN RAILWAYS' COMMITTEE ON PUBLIC RELATIONS

S. M. FELTON, President,
Chicago Great Western Railway.
J. E. Gorman, President,
Chicago, Rock Island & Pacific Ry.,
H. E. BYRAM, President,
Chicago, Milwaukee & St. Paul Ry.,
W. H. FINLEY, President,
Chicago & Northwestern Railway.
HALE HOLDEN, President,
Chicago, Burlington & Quincy R. R.
C. H. MARKHAM, President,
Illinois Central Railroad,
C. E. SCHAFF, President,
Missouri-Kansas-Texas Lines,
RALPH BUDD, President,
Great Northern Railway.

650 Transportation Building, Chicago, Illinois

Big Horticultural Meeting

ABOUT 1,000 members of the New York State Horticultural Society and of the New York State Vegetable Growers Association and their friends met at the Experiment Station at Geneva on Wednesday, August 1st, in a joint summer meeting. The morning session was devoted to addresses by several prominent speakers, while the afternoon was given over to tours of inspection of the Station spraying and dusting experiments with fruit and variety tests with fruits and vegetables, under the guidance of members of the staff who explained the experiments to the visitors. First-hand knowledge of the Station's experience with sprays and dusts proved of much interest to the fruit men, while the numerous plats in which the Station's new fruit varieties are being tried out attracted particular attention. The vegetable growers found the variety tests with beans, cucumbers, and peas, which are now under way, of special interest. Ideal weather conditions favored the field trips.

Chas. S. Wilson of Hall, N. Y., President of the Horticultural Society, presided at the morning session. Dr. R. W. Thatcher, Director of the Station, made a few remarks in way of welcome, and Mr. Wilson and R. W. McClure, President of the Vegetable Growers' Association, responded, pledging the support of their organizations to the Station and its work. A. R. Mann, Dean of the College of Agriculture at Ithaca, described in some detail the steps leading up to the merger of the Station at Geneva with the College at Ithaca under the Board of Trustees of Cornell University, which went into effect on July 1st last. Dean Mann pointed out the advantages to be gained from the union of the two institutions and outlined the future plans for the operation of the Station under the new plan. While Dean Mann is now the chief administrative officer over both the College and the Station, Dr. Thatcher has been made Director of Experiment Stations in New York State and will supervise all the agricultural research in the State, including the Station at Geneva, the Cornell University Agricultural Experiment Station at Ithaca, and the Long Island Vegetable Research Farm at Riverhead. A request for a new horticultural laboratory building at Geneva, as the first step in working out the program for the development of the work there, is to receive the full support of the College authorities before the State Legislature, said Dean Mann.

Hon. Peter G. Ten Eyck, member of the Joint Congressional Commission of Agricultural Inquiry and an officer and director in the State Farm Bureau Federation, made a strong plea for co-operation among farmers everywhere in order that they may bargain collectively in their buying and selling. Only by such means can the farmer hope to secure a fair return on the money invested in his business and on his labor, said the speaker.

T. E. Cross of Lagrangeville, N. Y., outlined the plans for the apple show to be held in New York City in November. Apple growers in the eastern states expect to make this the greatest apple show ever staged, he said, and hope to regain some of the prestige for eastern-grown fruit which has been lost in recent years. In order that every boy and girl who attends the apple show may have at least one apple, more than fifty growers pledged one or more barrels of fruit to be sent to New York for distribution at the show.

Prune Old Canes

WE hope that most of the growers of cane fruits have long before this cut off the old canes and burned them. This is one of the best ways to control diseases in the fruit patches. If this has not already been done, the sooner the old canes can be taken out and burned, the better, as they carry over diseases and insects.

Smoking the peace pipe in wartime

A late report from an A. E. F. veteran who found a can of tobacco in his soldier mail

It was during the thick of things in France that Gen. Pershing sent the following frantic cable to Washington:

"Tobacco is as necessary as food. Send a thousand tons at once."

As any ex-doughboy will tell you, a thousand tons of tobacco distributed over a fighting force of 2,000,000 men showed good intentions, but it didn't fill the need—not by a few million pipefuls.

Even today letters still come in from veterans who have forgotten the horrors of war and remember only the thrill of "a real American smoke" in France.

For one, Hugh Livingstone, Adjutant of Yankee Division Post No. 272, V. F. W., remembers:

Providence, R. I.

Richmond, Va.
Larus & Brother Co.,

Gentlemen:

My introduction to Edgeworth took place over in the training area in France under circumstances that left a lasting impression of the good qualities of Edgeworth.

One night, after a hard day's work, my bunkie drew a package from home, one of those mysterious affairs that might contain everything but what you wanted.

After due ceremonies of guessing he opened it and the first thing we saw was the blue box of Edgeworth. All further operations ceased until we filled the pipes. After using the French tabac for several weeks and burning our mouths and throats to a raw state you can imagine how cool and satisfying that Edgeworth tasted to us.

We smoked until we were ordered to bed, and I fell asleep smoking. You can just bet a letter went home for more Edgeworth.

Since that time I have used about every kind of tobacco that is put up, but it is Edgeworth for me when I can get it. Thank you for putting such a satisfying and cool tobacco on the market.

Gratefully yours,
(Signed) Hugh Livingstone

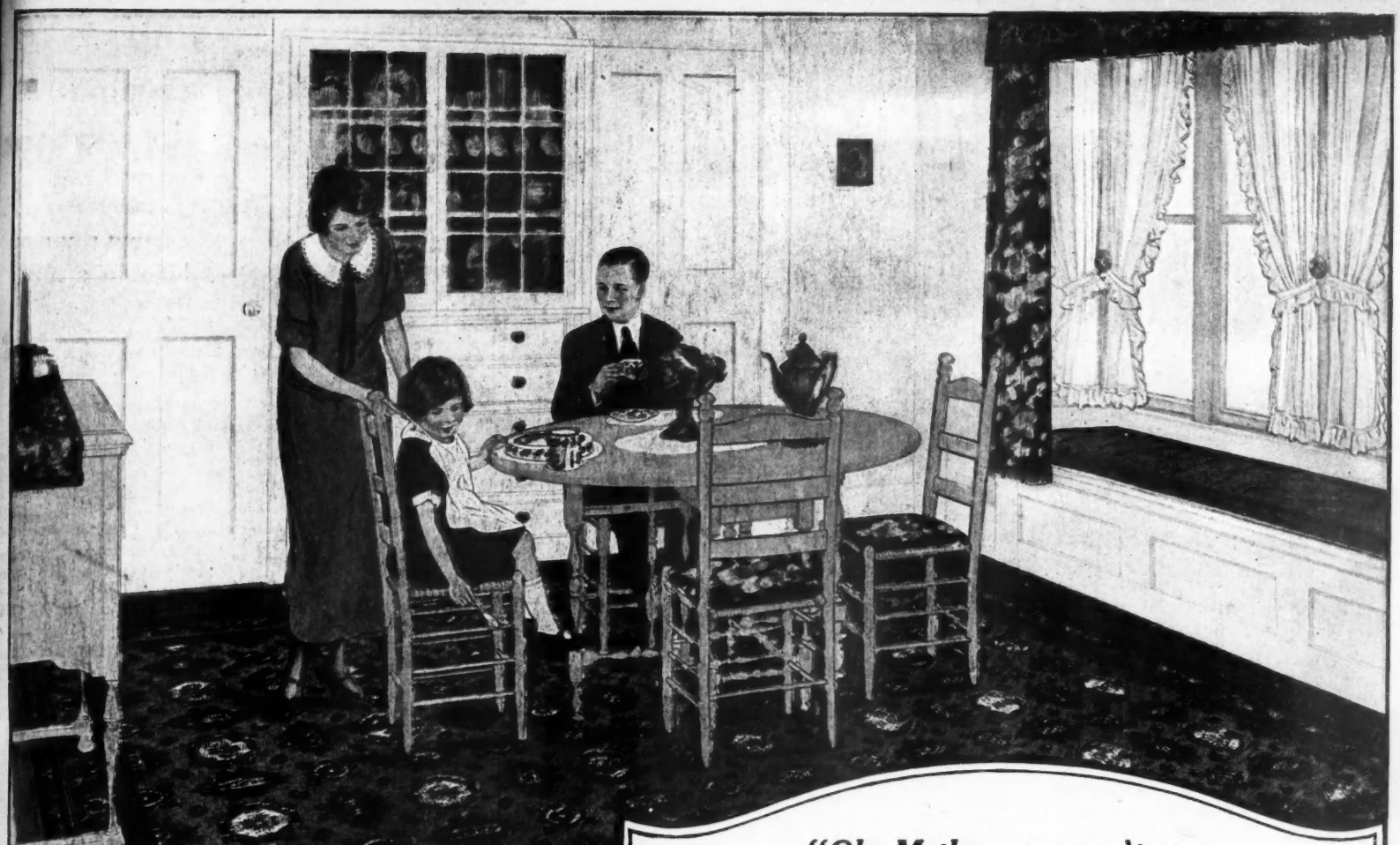
Probably any good American smoking tobacco would have brought the same joy to Mr. Livingstone and his bunkie in France. But it is a fact that when Edgeworth makes a friend, more often than not it is a lifetime affair.

Edgeworth's one great asset for most smokers is that it is always the same. You can buy a package in Chicago, another in New Orleans, another in San Francisco, and each package will give you the same cool, satisfying smoke.

If you are not an Edgeworth smoker, you are cordially invited to accept some free samples of both Edgeworth Plug Slice and Ready-Rubbed.

Just drop a postcard with your name and address to Larus & Brother Company, 83 South 21st Street, Richmond, Va., and the free samples will be forwarded to you immediately. If you will also include the name and address of your tobacco dealer, your courtesy will be appreciated.

To Retail Tobacco Merchants: If your jobber cannot supply you with Edgeworth, Larus & Brother Company will gladly send you prepaid by parcel post a one- or two-dozen carton of any size of Edgeworth Plug Slice or Ready-Rubbed for the same price you would pay the jobber.

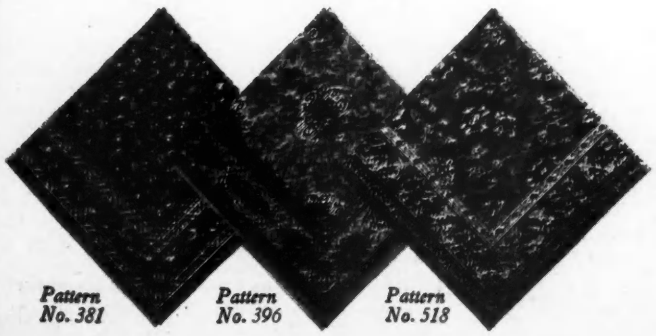


On the floor is pattern No. 323. In the 6 x 9 foot size the price is only $9.00

Be Sure to Look for this Gold Seal

There is only one guaranteed Congoleum and that is *Gold-Seal* Congoleum identified by the Gold Seal shown above. This Gold Seal (printed in dark green on a gold background) protects you against imitation floor-coverings, and gives you the protection of our money-back guarantee. It is pasted on the face of every genuine *Gold-Seal* Congoleum Rug and on every few yards of *Gold-Seal* Congoleum By-the-Yard. Look for it when you buy.

"Modern Rugs for Modern Homes," a beautiful illustrated folder showing all the attractive patterns in full color, will gladly be sent free upon request to our nearest office. From it you can choose, right at home, the design that is most appropriate for any room.



Pattern No. 381 *Pattern No. 396* *Pattern No. 518*

"Oh, Mother, you can't see where I upset my milk last night"

Practically nothing can stain the smooth waterproof surface of a *Gold-Seal* Congoleum Art-Rug. All spilled things—even milk and grease—can be whisked away without leaving a tell-tale trace! Just a few strokes with a damp mop and the rug is spotlessly clean again.

Gold-Seal Congoleum Rugs come in a host of attractive designs. There are elaborate Oriental motifs for living rooms and dining rooms, restful floral patterns for bedrooms, and wood-block and tile effects for kitchens and bathrooms.

Congoleum Rugs lie flat on the floor without any kind of fastening. They never kick up at the corners.

Millions of people are using these beautiful, durable rugs all over the house owing to their very low cost and their sanitary features.

Popular Sizes—Popular Prices

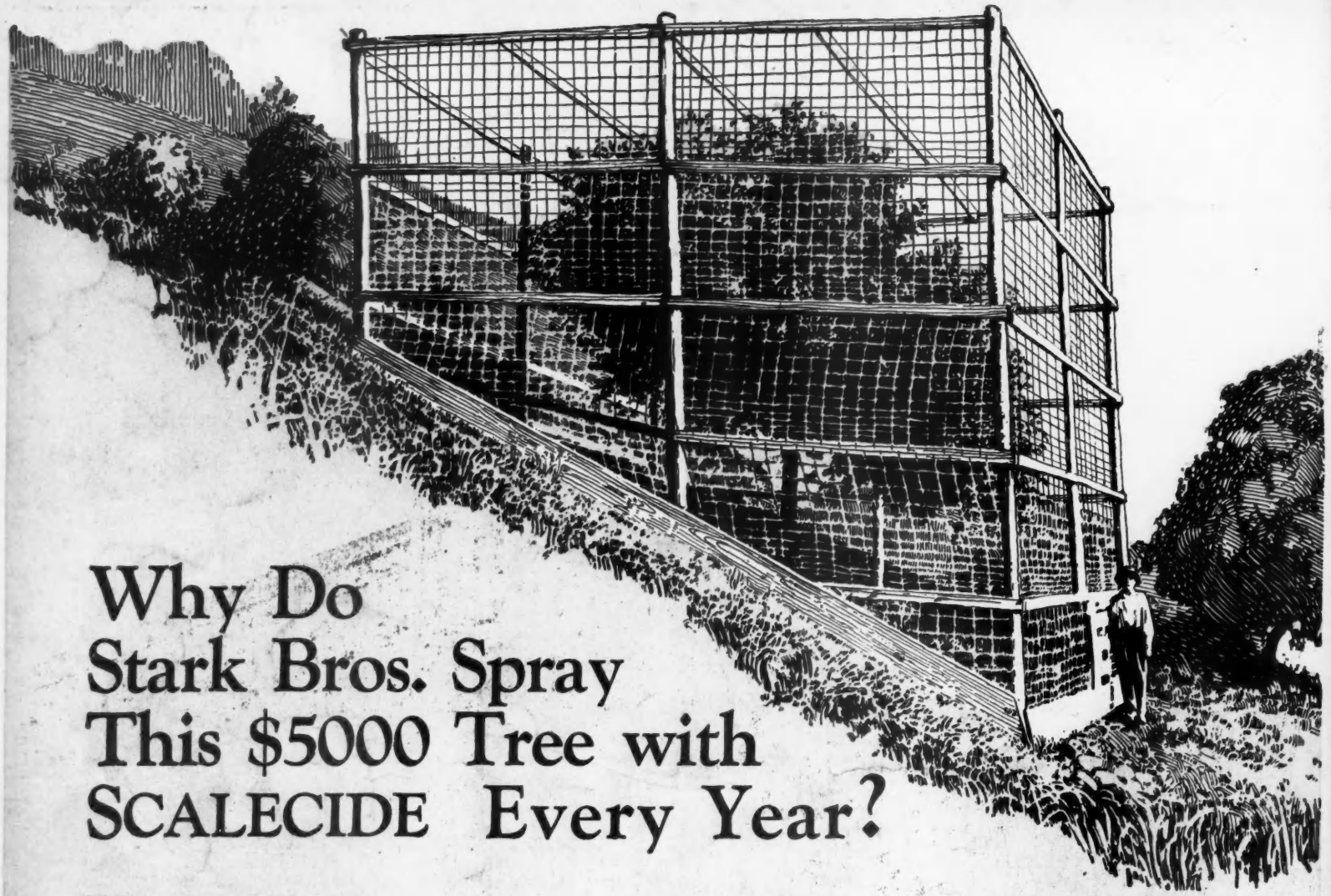
6	feet x	9	feet	$ 9.00	The rugs illustrated are	1½	feet x	3	feet $ .60
7½	feet x	9	feet	11.25	made only in the five large	3	feet x	3	feet 1.40
9	feet x	9	feet	13.50	sizes. The smaller rugs are	3	feet x	4½	feet 1.95
9	feet x	10½	feet	15.75	made in ot er designs to	3	feet x	6	feet 2.50
9	feet x	12	feet	18.00	harmonize with them.				

Owing to freight rates, prices in the South and west of the Mississippi are higher than those quoted.

CONGOLEUM COMPANY
INCORPORATED

Philadelphia New York Boston Chicago Kansas City San Francisco Minneapolis
Atlanta Dallas Pittsburgh Montreal London Paris Rio de Janeiro

Gold Seal CONGOLEUM *Art-Rugs*



Why Do Stark Bros. Spray This $5000 Tree with SCALECIDE Every Year?

HERE is perhaps the most valuable and the best known apple tree in the world—the mother of all genuine Golden Delicious. For this *original* Stark's Golden Delicious tree, Stark Bros. paid the record price of $5000.00. But, as the parent of the most promising apple on the market, it is prized even beyond this money valuation.

Standing on its native mountainside in West Virginia, this famed old tree is given the best care known. It is enclosed in a burglar-alarm cage for protection against man and beast. But to protect it against scale and other pests that are controlled by dormant sprays, SCALECIDE is applied every year. Can a higher recommendation of SCALECIDE be given? Can there be a more expert endorsement?

Stark Bros. can afford to take no risks with this $5000.00 parent tree, so they spray it annually with SCALECIDE. In a recent letter Mr. Paul Stark said, "For a number of years the tree has been sprayed each year with SCALECIDE. It is in clean, vigorous condition, bearing annual crops. This tree has borne as much as 35 bushels one crop."

Men like Stark Bros., who *know* orcharding and *know* SCALECIDE, *use* SCALECIDE. Let SCALECIDE be *your* dormant spray. Then you will know that you have done all that can be done *at that particular* time by any dormant spray or combination of sprays.

Fall spraying with SCALECIDE controls psylla and peach leaf curl. *Spring* application controls aphis, pear thrips, leaf minor, case bearer and leaf roller. *Either* fall or spring spraying with SCALECIDE controls scale, bud moth, European red mite, fungus or blight cankers from which are spread fire blight, collar rot and root rot. And in addition to controlling these insects and diseases, year after year use of SCALECIDE *invigorates the trees.* This year use SCALECIDE!

WE GUARANTEE that, if you will divide an orchard, your worst or best, in two parts equal in general condition, and for three years spray one part with SCALECIDE according to our directions and the other part with lime sulfur, giving the same summer treatment to both parts, the part sprayed with SCALECIDE will be better than the part sprayed with lime sulfur—in the judgment of three disinterested fruit growers—or we will refund the money you have paid for the SCALECIDE.

If your dealer doesn't carry SCALECIDE, show him this advertisement—or order direct from us. In any event, write today for the new booklet, "*An Ounce of Prevention*". Regardless of how great or how small your experience, regardless of how much or how little money you have made growing fruit, you cannot afford to be without this very helpful treatise on spraying. It is free. Address Dep't 11.

B. G. PRATT CO. 50 Church St. NEW YORK CITY

SCALECIDE

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